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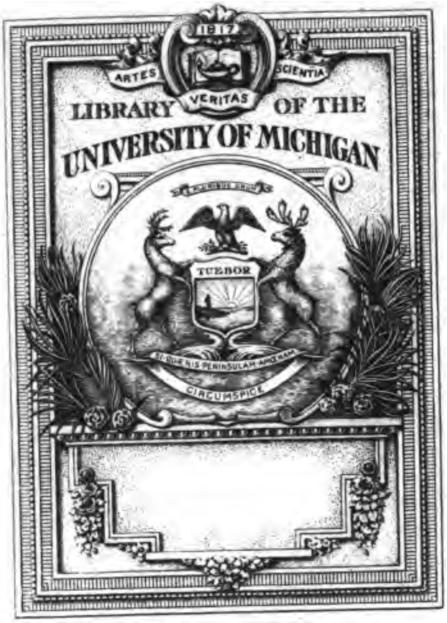

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A

TEXT-BOOK

ON

HARMONY.

BY

G. C. GOW.

Privately printed for use in Smith College classes.

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Albert A. Stanley
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Respectfully Dedicated to

DR. B. C. BLODGETT

and

PROF. E. B. STORY,

who have been to me inspiring teachers and valued friends, and whose suggestions and criticisms in preparation of this manual I would gratefully acknowledge.

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EXPLANATORY NOTE.

This book, being designed as a basis for oral teaching, contains no musical illustrations; and many statements are condensed to a single phrase, which in a manual for self instruction would need perhaps a whole paragraph.

The exercises after Chapters I, II and III furnish a more rational task to the student than the mere adding of upper parts to a bass already given. A student needs to understand at the outset that his problem is to make a melodious connection of chord with chord. With the laws stated for general governance it requires but little illustration and guidance on part of the teacher to make the writing of a bass part as simple as any other. After having completed these exercises, the author in his classes is accustomed to require the writing of a few figured basses from Emery's Supplementary Exercises. This the students find very easy while it serves to emphasize the work already done.

No attempt has been made to alter existing nomenclatures. Some terms that appeared to the author superfluous have been omitted ; several admirable ones have been adopted from recently published text books, while a few appear here for the first time.

The attention of teachers is called to sections 16, 23, 29, 30, 35, 42, 44, 45, 46-54, 59, 60 and 69. In these will be found the general statements of most of those points wherein the author has ventured to make anything like original contribution to the literature on the subject.

INTRODUCTORY CHAPTER.

1. **Music** is a language; **notation,** its written symbol.

2. A musical sound may differ from another musical sound in four particulars :—

In pitch : popularly speaking, sounds may be high or low.

In duration : sounds may be long or short.

In intensity : sounds may be loud or soft.

In timbre or color : sounds may have the quality of flute, violin, voice, &c.

3. The notation of pitch and of duration has been quite fully developed, for it is essential to the writing out of every kind of composition. The notation of intensity is desirable with most kinds of composition, and is fast acquiring its vocabulary. The use of color is largely confined to orchestral, organ and choral compositions. Its notation is the indication of what instruments, organ stops, or voices are to be used; i. e., the scoring of the composition.

4. There are a vast number of possible musical sounds (tones) of different pitch. Out of this number modern civilization has made choice of certain few. Starting upward from any given sound twelve pitches practically equidistant are used, but the thirteenth sound is strikingly similar to the first, the same yet not the same, being plainly above the first yet more easily mistaken for it than for any

other. The relationship of two such pitches (i. e. of a tone and the thirteenth tone above it) is called that of the **octave.** Sounds beyond the octave are often regarded as mere duplications of those within the octave.

Note.—In the discussion of pitch here given equal temperament is assumed.

5. Notation of pitch has been accomplished by means of the **staff**, a series of parallel horizontal lines, upon any one of which or upon the spaces between them characters called notes, which at the same time notate duration, may be placed. A position, space or line, upon the staff is called a **degree,** and to each degree a definite pitch is given.

Portions only of the (great) staff, namely, five lines of it, are used at a time, temporary additions being made when special notes are required, and signs (called **clefs**) used to indicate the section of the great staff then occupied.

Not all the pitches in use have received a staff-degree. Letter names are given to those within the octave, seven in number, which own a degree: namely, c d e f g a b. Special designations also are used for the different octaves, as follows:—

$$\overbrace{\text{AAA}\quad\text{BBB}}^{\textbf{Sub-Octave.}}\quad\overbrace{\text{CC — BB}}^{\textbf{Contra Octave}}\quad\overbrace{\text{C — B}}^{\textbf{Great.}}\quad\overbrace{\text{c — b}}^{\textbf{Small.}}\quad\overbrace{\underline{\text{c}}\text{—}\underline{\text{b}}}^{\textbf{One-lined.}}$$

$$\overbrace{\underline{\underline{\text{c}}}\text{ — }\underline{\underline{\text{b}}}}^{\textbf{Two-lined.}}\quad\overbrace{\underline{\underline{\underline{\text{c}}}}\text{ — }\underline{\underline{\underline{\text{b}}}}}^{\textbf{Three-lined.}}\quad\overbrace{\underline{\underline{\underline{\underline{\text{c}}}}}\text{ — }\underline{\underline{\underline{\underline{\text{b}}}}}}^{\textbf{Four-lined}}$$

One-lined c ($\underline{\text{c}}$) is the c which lies in the upper part of a man's and the lower part of a woman's voice, and is placed on the first line below the G clef portion of the staff or on the first line above the F clef portion. The g from which the G clef takes its name is thus seen to be $\underline{\text{g}}$ one-lined. And the f from which the F clef takes its name is seen to be f small. Most modern music is written upon these two portions of the great staff. Music for certain orchestral instruments and some ecclesiastical music still uses a C clef with middle c variously placed on lowest, third or fourth lines (called respectively soprano, alto, or tenor clefs.)

The five sounds within the octave omitted from the staff are found between c–d, d–e, f–g, g–a, and a–b. They may be readily indicated by use of the sign ♭, called a **flat** and signifying that the sound desired is the next sound (a half-step, vide sec. 6) below the pitch of the note at the left of which it stands, or by the sign ♯, called a **sharp** and signifying that the sound desired is the next (a half-step) above the pitch of the note at the left of which it stands.

It is often valuable in notation to use ♭s or ♯s to indicate sounds which have position on the staff, thus writing the sound upon another degree than its own: for example, ♯e = f, or ♭c = b. Often again it is desired to use a certain degree yet call for the second sound (a whole-step, vide sec. 6) above or below the regular pitch. This is accomplished by use of the **double sharp,** ×, or the **double flat,** ♭♭. The sign of restoration after a flat or a sharp has appeared, namely, ♮, is called a **natural.** The sign of restoration to a single ♯ from × is ♮♯, to a single ♭ from ♭♭ is ♮♭.

6. A **Half-step** is the pitch relationship of a musical sound to the next musical sound above it, as e–f, g–♭a, ♯c–d.

A **Whole-step** is the pitch-relationship of a musical sound to the second sound above it: briefly, two half-steps, as c–d, e–♯f, ♭b–c.

7. The **Major Scale** is

1) A certain selection of musical sounds serving as a basis for musical composition.

Note.—Compositions often contain many sounds not in the scale in which they are said to be written, but the scale is basis for the composition as a whole.

2) The sounds of the major scale are selected as follows: the initial tone is called the keynote; the second

tone is a whole-step above it; the third a whole-step above that, the fourth a half-step higher, the fifth a whole-step higher, the sixth a whole-step higher, the seventh a whole-step higher, and the last a half-step higher at the octave of the first. Briefly, the selection is by two whole-steps and a half-step, three whole-steps and a half-step.

8. Any one of the twelve different sounds may be key-note of a major scale. Eleven of these scales call for one or more of the sounds having no staff position: their notation therefore requires ♭s or ♯s. Several of them could be written with almost equal convenience in two ways. Every written (diatonic, vide sec. 14) scale makes use of successive degrees; e. g., no major scale would contain for two of its notes ♭f and ♯f; they would be written either as e and ♯f, or as ♭f and ♭g.

9. Since music which begins in a certain scale usually has the notation of that scale and is said to be written in that key, in order to avoid the constant writing of sharps or flats it is the rule to group the sharps or flats required in that scale at the beginning of every staff after the clef-sign and then to omit them before the notes themselves. This group is called the **Signature** of the key. Other ♭s or ♯s than those, all ♮'s, and all restorations from ♮s back to the scale are written at the left of the notes requiring them. Such signs, distributed through the music, are called **accidentals.** Accidentals serve also as a miniature signature for the measure in which they occur, though only for the degree upon which they are placed (not for the octaves of the note affected.) If a note thus affected is held by tie into the next measure the value of the accidental continues through the tied note.

10. An **Interval** is the pitch-relationship of any two musical sounds. Intervals are named according to the degrees of the staff upon which the two notes are written, and according to the varying divergencies of pitch which two notes on certain degrees may have to each other, i. e., notes on adjoining degrees make interval of a second, but, through use of sharps and flats, seconds may vary greatly in relationship of sound.

11. The intervals which the key-note of a major scale makes with itself and with the notes above it are as follows: with itself, a **perfect prime** (also called a unison); with the second note of the scale, a **major second**; and so on, the list of intervals being, **Perfect prime, major second, major third, perfect fourth, perfect fifth, major sixth, major seventh, perfect octave.** Occasionally beyond the octave intervals are named, as **major ninth, tenth, &c.,** but usually intervals outside the octave are regarded as duplicates of those within; cf. sec. 4.

A perfect or major interval made larger by a half-step is called an **Augmented** interval.

A perfect interval made smaller by a half-step is called a **Diminished** or **Imperfect** interval.

A major interval made smaller by a half-step is called a **Minor** interval.

A minor interval made smaller by a half-step is called a **Diminished** interval.

Intervals smaller than diminished, if named, would be called doubly diminished, &c.

Intervals larger than augmented, if named, would be called doubly augmented, &c.

Two different writings of the same sound, as the diminished second, is called the **Enharmonic interval.**

The augmented prime is sometimes called a **chromatic half-step.**

The minor second is sometimes called a **diatonic half-step.**

Intervals also are classified as **consonances** and **dissonances.**

Consonances are intervals musically restful, needing not in themselves to be followed by other intervals. They include all perfect intervals and major and minor thirds and sixths.

Dissonances are intervals unrestful, requiring to be followed by consonances. They include all intervals not consonant, namely, all seconds and sevenths and all diminished and augmented intervals.

12. It is often desirable to know not only a given interval but the interval which either note makes with the nearest octave of the other, i. e., the complement of the octave. Such complement of the octave is called the **Inversion** of the interval. The inversion of a prime is an octave, of a second is a seventh, of a third a sixth, of a fourth a fifth, of a fifth a fourth, of a sixth a third, of a seventh a second, and of an octave a prime.

The inversion of a perfect interval is some other perfect interval; of a major interval is a minor interval; of a minor interval is a major; of a diminished is an augmented; and of an augmented is a diminished interval. The inversions of all consonant intervals are consonant intervals; of all dissonant intervals are dissonant intervals.

For convenience observe that, since intervals are read from the lower note upward, the inversions will reverse the reading, i. e., the inversion of a-b is b-a, of ♭d-♯f is ♯f-♭d.

13. The major scale is both harmonic and melodic, i. e., capable of use in every way to make both good harmonies and good melodies. The **Minor scale** is not so flexible. In the endeavor to use it for all purposes it has developed several distinct forms.

a. The **Harmonic Minor scale** differs in two tones from the major scale found on the same keynote; its third tone is lower by a half-step, forming a minor third with the keynote; its sixth is also a half-step lower, making a minor sixth with the keynote. Its intervals with keynote are therefore, perfect prime, major second, *minor third,* perfect fourth, perfect fifth, *minor sixth,* major seventh, perfect octave.

b. The **Melodic minor scale** is identical with the Harmonic in its first five tones. Above the fifth in ascending it uses major sixth and major seventh (rarely also minor sixth and minor seventh,) in descending minor seventh and minor sixth (occasionally also major seventh and minor sixth). These variations are determined mainly by the accompanying harmonies.

NOTE.—c. Sometimes a minor scale having minor third; minor sixth and minor seventh is called the **Normal Minor Scale.** This is however a matter of theory, not of practical usage.

14. The **Chromatic scale** makes use of the whole twelve tones within the octave. The five tones additional to the major scale should be written in ascent, as alterations from the tone below them, in descent as alterations from the tone above. In practice, however, many writers vary the notation in order to avoid double sharps and double flats.

In distinction from the chromatic scale the other scales, which make use of successive degrees, are called **Diatonic scales.** Passages using the scale notes in order are likewise called **chromatic** or **diatonic progressions.**

15. Scales which contain all notes save one in common are said to be **related.**

NOTE.—Many writers extend relationship to scales with two divergent notes.

Each Major scale is related to the major scales whose keynotes are at the perfect fifth above, and at the perfect fifth below its keynote (e. g. the scale of A is related to the scale of E and of D). This appears clearly upon observing the cleavage of the major scale into two four-note scales (**tetrachords**) having each the progression, two whole-steps and a half-step, the first note of the upper tetrachord lying a whole-step above the last note of the lower. Any such tetrachord might serve as the upper part of one major scale or the lower part of another, the keynotes of the scales being a perfect fifth apart. The remaining tetrachord of the lower scale differs then in its last note from the upper scale.

This relationship of major scales and their signatures may be graphically presented as follows:—

♭C—♭G —♭D — ♭A —♭E —♭B — F — C—

—G —— D —— A —— E —— B —— ♯F —— ♯C

Note.—The staves above are to be filled with signatures as taught, or copied accurately from printed music.

Each scale differs in its seventh from the scale below it, and in its fourth from the scale above it. The keynote of all sharp keys is the note above the right hand sharp. The keynote of all flat keys is the fourth below the right hand flat.

The scale of ♯C is more conveniently notated as the scale of ♭D. The scale of ♭C is more conveniently notated as the scale of B.

Each Minor scale is related to the major scale the keynote of which is the third of the minor scale. For certain historical reasons minor scales have no true signatures, but music written in a minor scale is notated with the signature of its relative major scale, the false note being corrected at every occurrence by an accidental.

Note.—Although there is greater difference between a major scale and the minor scale having the *same keynote* than between a major scale and the minor scale having the *same signature*, yet the harmonic union of the two former scales is much closer. So close is that union that it is often advisable to regard all the scales with a given keynote, the Major, the various forms of the Minor, the Chromatic, and certain other forms not here defined, as but variants of one scale.

General Note.—This chapter does not aim to treat the notation even of pitch exhaustively. It gives explanation of certain terms and presents a conspectus of scales which a student of harmony needs to hold familiarly in mind. Sufficient knowledge of other details of notation, such as of duration and force (time and accent) must be assumed.

CHAPTER I.

GENERAL STATEMENTS.

16. The study of Harmony is the study both of chords and of melodies.

A **chord** is a combination of musical tones that may be sounded at once—vertical music.

A **melody** is a succession of musical tones—horizontal music.

Harmony discusses what chords are valuable, and what melodies should be created in the passage from chord to chord. The study of harmony involves, however, only a partial study of melody, single unattached melodies having far greater liberty of movement than those melodies involved in the making of chords.

17. As a convenience in musical notation, it was formerly often the custom for musicians who understood the laws of chord connection to write out only the lowest (bass) notes of a series of chords and indicate the remaining notes by figures stating the intervals which the necessary upper notes made with this bass. This mode of notation (formerly called Thorough-bass) has for the most part gone out of use except as an aid in the study of harmony. When the intervals were fully figured the reading of such a bass would be quite simple. E. g., the figures $\begin{smallmatrix}7\\4\\2\end{smallmatrix}$ above the bass *g* would call for an *a*, a *c*, and an *f;* the figures $\begin{smallmatrix}6\\5\\3\end{smallmatrix}$ above the *g* would call for a *b*, a *d*, and an

e; the figures $\begin{smallmatrix}8\\6\\4\end{smallmatrix}$ above the *g* would call for a *c*, an *e*, and a *g*. Accidentals may be indicated with the figures just as with the notes; $\begin{smallmatrix}\sharp 7\\5\\4\\\flat 2\end{smallmatrix}$ above *g* would call for ♭ *a*, *c*, *d*, ♯*f*.

But the figuring was in most cases abbreviated, the use of certain chords and positions of chords being so common that just a hint of their figuring would suggest the whole chord; and in the modern use of figured basses nearly every figuring is abbreviated. The particular mode of abbreviation used with each chord will be studied in connection with the chord. There are however a few general rules of writing and reading figures that may here be stated.

1.) The order of the figures is not regarded: i. e., the upper figure does not necessarily indicate the highest pitch; laws of chord connection care for this. Only the first chord is exception to this rule; here the upper figure (usually the only figure) does indicate highest pitch.

2.) Two series of figures over one bass note call for two chords, each chord taking half the time of the bass note; unless this bass note occupies more than a full division of a measure, when one chord will fill the complete division, the other the remaining time.

3.) The *notes* called for by a series of figures may be retained with a new bass note by use of a series of hyphens over the second bass note. The same effect could be obtained by writing figures over the new bass, which would be different figures since the upper notes retained make other intervals with the new bass.

4.) Instead of writing a sharp or a natural used to indicate a tone chromatically above the scale note it is more customary to draw a line through the accompanying figure, as $\cancel{6}$ for ♯6, or $\cancel{4}$ for ♮4 (altered from ♭).

5.) When an accidental is to be used with the third above the bass the figure 3 is usually omitted; a ♯, ♭, or ♮ alone over a bass note, or with other figures above or below it, always meaning ♯3, ♭3, or ♮3.

TRIADS.

A. Structure.

18. The simplest chord in use in music is the **Triad.** It consists of a note, its third, and its fifth. The note from which it takes rise, called the *root* of the chord, gives name to the chord; as the triad of ♭ e, the triad of g. Any of its notes may be doubled, and any of the three notes may be at the bottom of the chord, or it may be spread over several octaves, the actual sounds being widely separated in pitch.

It is found most satisfactory to study chord successions as if they were to be sung by four voices, the highest and lowest voices, Soprano and Bass, being called outer voices, the others, Alto and Tenor, being called inner voices of the chord. Since the triad has but three different tones four-part writing necessitates doubling one tone.

Notes of a triad are said to be doubled whether the two voices singing the doubled note are at unison or octaves. *Under ordinary circumstances the root is the best tone of a chord to double; the major third the least desirable* (vide sec. 35). Special conditions give many exceptions to this statement, however. Neither the root nor third can be omitted from a triad; but the fifth may be, *if it is perfect.*

Voices are said to move in **contrary motion** when one goes to a higher pitch, the other to a lower; in **oblique motion** when one retains the same pitch; in **similar motion** when both move to higher or both to lower pitches, though not necessarily by the same interval. The expression **parallel motion** is often used as equivalent to similar motion, but strictly speaking should be confined to cases where the voices move the same interval and sustain the same relation in the second chord as in the first.

19. For convenience several arrangements of the triad have received special names. With reference to the Soprano the triad is said to be in **1st position** if the soprano is root, in **2d position** if the soprano is third, and in **3d position** if the soprano is fifth of the triad. With reference to the Bass the triad is said to be in **fundamental position** if the bass is root, in **1st inversion** if the bass is third, and in **2d inversion** if the bass is fifth of the triad.

A chord also is said to be in **open position** when an octave of either tenor or soprano lies between alto and the other part (of the three named) ; in **close position** when an octave of neither tenor nor soprano lies between alto and the other part ; and in **partially-open position** when one such octave is found. Following these indications a series of chords are said to be written in close or in open harmony. A simple statement of close position is that the three upper voices lie within the compass of an octave.

20. Triads have also received special names according to the nature of the intervals which the root makes with the third and the fifth.

A triad having with root the major third and perfect fifth is called a **Major Triad.**

A triad having with root the minor third and perfect fifth is called a **Minor Triad.**

A triad having with root the minor third and diminished (imp.) fifth is called a **Diminished Triad.**

A triad having with root the major third and augmented fifth is called an **Augmented Triad.**

Most writers recognize these triads only by name though several others are used.

Major and Minor triads are wholly consonant.

Augmented and Diminished triads contain one dissonance each.

21. The triads formed upon the several tones of the Major and Harmonic Minor Scales present noteworthy differences. The following graphic representation of them should be memorized. The Roman Numerals indicate the number of the scale-note used as root ; a large numeral standing for Major Triad, a small numeral for Minor Triad, a large numeral with+ for Augmented Triad, and a small numeral with° for a Diminished Triad.

The Major Scale has I ii iii IV V vi vii°
" Minor Scale has i ii° III+ iv V VI vii°

Classified by triads,

Major Triads are found in the Major Scale on I IV and V, in the Minor Scale on V and VI.

Minor Triads are found in the Major Scale on ii iii and vi, in the Minor Scale on i and iv.

Diminished Triads are found in the Major Scale on vii°, in the Minor Scale on ii° and vii°.

Augmented Triads are found in the Minor Scale on III+.

22. The *notes* of the diatonic scale have received certain characteristic names by which also the triads based upon them are called, as follows: the keynote is called the **Tonic**; the fifth is called the **Dominant** (ruling-note); the fifth below the tonic, or fourth of the scale, is called the **Sub-dominant** (under-ruling-note); the third of the scale (midway between tonic and dominant) is called the **Mediant**; the sixth of the scale is called the **Sub-mediant**; the second is called **Super-tonic**; and the seventh from its strong tendency upward to the tonic is called the **Leading-tone.**

The tonic, dominant, and subdominant triads together contain all the notes of a scale, are often used to define a key, and for other reasons as well have been named the **Principal Triads.**

B. Melodic Succession of Triads.

23. Melodies involved in the succession of chords follow this general law, that *the less of motion there is in the melodies the better the connection of the chords.* N. B. This law does not advocate chromatic successions of chords: it is in force only after the chords to be connected are chosen.

Hence the

Rule. If a note is common to two chords (a note-of-union) let the voice that sang it in the first chord retain it in the second; and let the other voices pass to the nearest notes in the new chord.

Exception 1. The bass often overrides this rule through the harmonic value of chords with their roots as basses: i. e., when the bass is root of the chord it is always at liberty to disregard notes-of-union in order to pass to the root of the next chord. In such motion the general law of melody still forbids two successive skips of more than a third in the same direction.

Exception 2. In a repetition of the same chord it is often valuable to abandon some or all of the union notes, taking the chord in a new arrangement. This is especially advantageous in approaching the cadence, vide sec. 40.

Exception 3. Certain serious faults to be explained later, as the use of augmented intervals, may be avoided by giving up the note-of-union.

24. It is regarded as a serious fault if two voices which have both moved in successive chords stand at the fifth or octave to one another in both chords. This is called **Consecutive or Parallel Fifths or Octaves.** If the rule given in section 23 is carefully observed this fault may be avoided by using in addition the

Rule. When successive chords contain no union notes let the upper voices move in contrary motion to the bass to the nearest notes of the new chord.

25. It is also regarded as a serious fault if any voice moves an augmented interval. Unless chromatic notes are used this fault can only occur in the minor scale: here the augmented second between submediant and leading tone is especially troublesome.

For a working

Rule. 1. Augmented intervals are avoided by use of contrary motion. This takes precedence of the rule relating to union notes, vide sec. 23, exc. 3.

2. When the Submediant triad precedes or follows the Dominant triad, the former may not double root or fifth, but always third.

26. The figuring of triads is as follows:

a. When the bass note is *root* of the triad full figuring is $\begin{smallmatrix}8\\5\\3\end{smallmatrix}$. This form of the chord is so constantly met with that this figuring is always assumed when none other is given: i. e., a bass note having no figuring implies $\begin{smallmatrix}8\\5\\3\end{smallmatrix}$.

Under certain circumstances one or more of the figures may be written.

1.) Over the first bass note one figure is often used to indicate the soprano.

2.) When two chords are required over a single bass note, one of which is the triad with its root as bass, either 3, 5, $\begin{smallmatrix}5\\3\end{smallmatrix}$ or 8 may be used to notate it.

3.) The use of an accidental with a note must be expressed in figuring.

b. When the bass note is *third* of the triad the full figuring is $\begin{smallmatrix}8\\6\\3\end{smallmatrix}$. This form of the chord is also common, and its abbreviated figuring with a 6 above is usually sufficient.

This is the **1st Inversion** of the triad and is called the **Chord of the Sixth.**

c. When the bass note is *fifth* of the triad the full figuring is $\begin{smallmatrix}8\\6\\4\end{smallmatrix}$, by abbreviation $\begin{smallmatrix}6\\4\end{smallmatrix}$. This is the **2nd Inversion** of the triad and is called the **Chord of the Sixth and Fourth,** or the **Six-four Chord.**

27. A whole composition might be written with triads in fundamental position alone as its chords, but because of the constant repetition of the same effects it would be extremely monotonous and because of continual skipping in the bass from root to root it would be unmelodious. Yet without using other chords than triads greater variety and much more melodiousness can be obtained by introducing freely the chord of the sixth.

a. This enables the bass to conform largely to the rule of melody in sec. 23.

b. In the use of sixth-chords attention must be called once more to the statements made about the doubling of notes. In major triads the third (which here is the bass) should not be doubled except to produce a smoother melody. Sixth-chords frequently follow one another. When in such a case the bass moves by diatonic progression often the doubling of the third in successive or alternate chords is the only way of preventing unpleasant skips in some of the parts.

c. In the connection of a sixth chord with the next chord there is frequently choice as to which of two union notes (doubled at the octave) shall be held. Choice will best conform to the general rule that contrary motion is more melodious than similar motion.

NOTE.—Contrary motion calls attention to the melodies involved in chord succession as similar motion does not.

28. A still further means of producing variety and melodiousness in use of triads is to introduce six-four chords. This has been found to be effective only somewhat rarely and under special conditions, one or two of which are as follows :—

a. When all the parts that move, come to the chord and leave it by diatonic progression ; and this preferably upon an unaccented part of the measure.

b. At the close of a composition, the $^{6}_{4}$ chord of the Tonic followed by the dominant harmony in fundamental position, and it in turn by the tonic chord in fundamental position. Here the $^{6}_{4}$ tonic chord is preferably upon the accent. Further explanation of this will come under section 40. Usually the best note to double in $^{6}_{4}$ chords is the bass (fifth of the triad).

29. The statement that the root of a chord is best to double has one marked exception in case of the leading-tone triad, for the leading-tone itself can rarely be doubled. In most of its uses the leading-tone is one of a class of tones that because of their harmonic propensities may be called Tendency notes. A valuable rule to have in mind is,

Tendency notes are not to be doubled.

The leading-tone as a tendency note has strong natural movement to the tonic. A doubled leading-tone would be compelled in one part to disobey its tendency or make consecutive octaves.

But, rarely, as in a sequence (vide sec. 39), the leading-tone loses its tendency and may then be doubled.

30. The importance of the tendency note in the leading-tone triad, and the nature of the triad itself (diminished) produce a sense of incompleteness which is best satisfied by having the tonic triad follow. This sense of incompleteness is called *need of resolution ;* introducing the triad suitable to complete it is called *resolving the chord ;* the triad thus used is called *the resolution.* Thus the tonic triad is natural resolution of the leading-tone triad. That this is so is due both to the decisive impulse of the leading-tone itself in determining a new root, and to a general law of resolution, that

Dissonant intervals incline to the nearest consonances.

The need of resolution though fairly apparent in the leading-tone triad is by no means so marked in triads as it is in the classes of chords which we are to consider hereafter.

There are in fact only three triads calling for resolution (VII°, II°, and III+) since major and minor triads are wholly consonant. The Mediant triad of the minor scale, when legitimately used, has a natural resolution to the Submediant triad.

EXERCISES.

Note.—The figures over the numerals indicate only the positions of the chords. Accidentals and other modifications would be necessary for a figured bass. A line under two numerals indicates that the same bass note serves for both chords.

1. $\frac{2}{2}$ I | IV | I | V | I ||
Write in C ($\overset{8}{\mathrm{I}}$), in F ($\overset{5}{\mathrm{I}}$), in ♭E ($\overset{3}{\mathrm{I}}$).

2. $\frac{2}{2}$ I | V | I | IV | V | I ||
In G ($\overset{3}{\mathrm{I}}$), in E ($\overset{5}{\mathrm{I}}$).

3. $\frac{2}{2}$ I– | IV ii | V iii | vi IV | V V | I– ||
In B ($\overset{5}{\mathrm{I}}$), in ♭G ($\overset{3}{\mathrm{I}}$).

4. $\frac{2}{2}$ I– | vi IV | ii V | IV | vi IV | VV | I– ||
In ♭B, in ♯F ($\overset{3}{\mathrm{I}}$).

5. $\frac{2}{2}$ I V | I IV | V vi | IV V | I– ||
In E ($\overset{5}{\mathrm{I}}$), in ♭D ($\overset{8}{\mathrm{I}}$), in ♭A ($\overset{3}{\mathrm{I}}$).

6. $\frac{2}{2}$ i iv | ii° V | i iv | V VI | iv V | i– ||
In a ($\overset{3}{\mathrm{i}}$), in ♯f ($\overset{5}{\mathrm{i}}$).

7. $\frac{2}{2}$ i– | iv VI | V i | iv V | i– ||
In e, in c ($\overset{5}{\mathrm{i}}$), in ♯g ($\overset{3}{\mathrm{i}}$).

8. $\frac{2}{2}$ i V | i iv | V VI | iv V | i– ||
In e, in b ($\overset{3}{\mathrm{i}}$), in g ($\overset{5}{\mathrm{i}}$).

9. $\frac{2}{2}$ I– | ii $\overset{6}{\mathrm{V}}$ | I $\overset{6}{\mathrm{IV}}$ | $\underline{\overset{\substack{6\\4}}{\mathrm{I}}\ \overset{3}{\mathrm{V}}}$ | vi $\overset{6}{\mathrm{ii}}$ | $\underline{\overset{\substack{6\\4}}{\mathrm{I}}\ \overset{3}{\mathrm{V}}}$ | I– ||
In F^5, in ♭A^3.

10. $\frac{2}{2}\quad \mathrm{I}- \mid \mathrm{IV}\ \mathrm{ii} \mid \mathrm{V}\ \mathrm{V} \mid \mathrm{I}\ \overset{6}{\mathrm{vii}}{}^{\circ} \mid \overset{6}{\mathrm{I}}\ \overset{6}{\mathrm{ii}} \mid \overset{\substack{6\\4}}{\mathrm{I}}\ \mathrm{V} \mid \mathrm{I}- \parallel$

In D, in A^{3}, in ♭E^{5}.

11. $\frac{2}{2}\quad \mathrm{I}\ \overset{6}{\mathrm{V}} \mid \mathrm{I}\ \mathrm{IV} \mid \mathrm{ii}\ \overset{6}{\mathrm{V}} \mid \mathrm{I}\ \overset{6}{-} \mid \overset{\substack{6\\4}}{\mathrm{I}}\ \mathrm{V} \mid \mathrm{I}- \parallel$

In ♭D^{5}, in B.

12. $\frac{2}{2}\quad \mathrm{i}\ \overset{6}{\mathrm{iv}} \mid \underline{\overset{\substack{6\\4}}{\mathrm{i}}\ \mathrm{V}} \mid \mathrm{VI}\ \overset{6}{\mathrm{ii}}{}^{\circ} \mid \underline{\overset{\substack{6\\4}}{\mathrm{i}}\ \mathrm{V}} \mid \mathrm{i}- \parallel$

In ♭a^{3}, in ♯g^{5}, in d.

13. $\frac{2}{2}\quad \mathrm{i}\ \overset{6}{\mathrm{vii}}{}^{\circ} \mid \overset{6}{\mathrm{i}}\ \mathrm{iv} \mid \underline{\overset{\substack{6\\4}}{\mathrm{i}}\ \mathrm{V}} \mid \mathrm{i}\ \overset{6}{\mathrm{ii}}{}^{\circ} \mid \overset{\substack{6\\4}}{\mathrm{i}}\ \mathrm{V} \mid \mathrm{i}- \parallel$

In e, in g^{5}, in ♭b.

14. $\frac{2}{2}\quad \mathrm{i}\ \overset{6}{\mathrm{V}} \mid \mathrm{i}\ \overset{6}{\mathrm{iv}} \mid \underline{\overset{\substack{6\\4}}{\mathrm{i}}\ \mathrm{V}} \mid \mathrm{i}\ \overset{6}{-} \mid \mathrm{V}\ \overset{6}{-} \mid \mathrm{i}\ \overset{6}{\mathrm{ii}}{}^{\circ} \mid \underline{\overset{\substack{6\\4}}{\mathrm{i}}\ \mathrm{V}} \mid \mathrm{i}- \parallel$

In ♭e^{5}, in ♯c, in ♯a^{3}.

CHAPTER II.

CHORDS OF THE SEVENTH.

31. The **chords of the seventh** are by far the most important harmonies with which we meet. Both because of the variety of their intervals, and the marked tendency which several of them show toward particular resolutions they add greatly to the richness and melodiousness of music.

A seventh-chord may be defined as a triad with seventh added, or as a chord having root, third, fifth and seventh. What has already been said regarding the various ways of writing triads, in close or open position, in fundamental position or inversions, with doublings or omissions applies equally well to seventh chords. But observe that in four part harmony, since the seventh-chord itself has four different notes, there can be no doubling without omission ; and there can be no omission at all in chords that do not have the perfect fifth. The root is the usual, sometimes the only note to double, since the seventh always and the third often are tendency notes.

Because seventh-chords contain stronger dissonances, and often several of them, the need of resolution is more pronounced than in triads.

32. It is important to recognize the varied forms of seventh-chords in the scales. Adding a figure 7 to the triad-symbols to indicate a minor seventh, a 7′ for a major

seventh, a 7° for a diminished seventh. The chords of the scales appear as follows :—

Major Scale $\mathrm{I}^{7\prime}$ ii^{7} iii^{7} $\mathrm{IV}^{7\prime}$ V^{7} vi^{7} $\mathrm{vii}^{\circ 7}$.
Minor Scale $\mathrm{i}^{7\prime}$ $\mathrm{ii}^{\circ 7}$ $\mathrm{III}^{+7\prime}$ iv^{7} V^{7} $\mathrm{VI}^{7\prime}$ $\mathrm{vii}^{\circ 7 \circ}$.

Major Triads with major sevenths appear in the Major Scale on $\mathrm{I}^{7\prime}$ $\mathrm{IV}^{7\prime}$, in the Minor Scale on $\mathrm{VI}^{7\prime}$.

Major Triads with minor sevenths appear in the Major Scale on V^{7}, in the Minor Scale on V^{7}.

Minor Triads with major sevenths appear in the Minor Scale on $\mathrm{i}^{7\prime}$.

Minor Triads with minor sevenths appear in the Major Scale on ii^{7} iii^{7} iv^{7}, in the Minor Scale on iv^{7}.

Diminished Triads with minor sevenths appear in the Major Scale on $\mathrm{vii}^{\circ 7}$, in the Minor Scale on $\mathrm{ii}^{\circ 7}$.

Diminished Triads with diminished sevenths appear in the Minor Scale on $\mathrm{vii}^{\circ 7 \circ}$.

Augmented Triads with major sevenths appear in the Minor Scale on $\mathrm{III}^{+7\prime}$.

33. The figuring of seventh-chords is as follows :—

The chord with root as bass : full figuring $\begin{smallmatrix}7\\5\\3\end{smallmatrix}$; abbreviation 7.

The chord with third as bass (1st Inversion) : full figuring $\begin{smallmatrix}6\\5\\3\end{smallmatrix}$; abbreviation $\begin{smallmatrix}6\\5\end{smallmatrix}$.

The chord with fifth as bass (2d Inversion) : full figuring $\begin{smallmatrix}6\\4\\3\end{smallmatrix}$; abbreviation $\begin{smallmatrix}4\\3\end{smallmatrix}$.

The chord with seventh as bass (3d Inversion) : full figuring $\begin{smallmatrix}6\\4\\2\end{smallmatrix}$; abbreviation 2.

Observe that the abbreviated figuring where two figures are given states the seventh and the root of the chord, where but one is given states seventh or root, the bass note itself being the other note of the dissonant interval.

34. The most important of all seventh-chords is the **Dominant Seventh.** It consists, in both major and minor scales, of a major triad and minor seventh, and its three upper notes form the leading-tone triad. It was the first seventh chord to win approval as a legitimate chord, and it has the most natural resolution of all chords. This resolution is to the tonic triad, the chord to which the leading-tone triad points and with which the dominant triad most readily connects.

It has two dissonances, the minor seventh and the diminished fifth (between 3d and 7th of chord). The resolution of these two dissonances into the tonic triad, satisfying by one movement the inclination of both, impels the seventh downward to the third of the tonic chord. This impulse is so strong as to make of the seventh in this chord a *tendency note.* Hence the

a. Rule. The Seventh always descends one degree to its place in the new chord.

As in triads, so in seventh chords the bass is free to move from root to root. In accordance with this fact the resolution of the dominant seventh gives the following movement of the root.

b. Rule. When the root is bass it moves to the new root (a fourth upward, or a fifth downward) ; when the root is an upper part it remains as note of union.

The fifth in the dominant seventh chord is supertonic of the scale, and by the first law of chord connection follows the

c. Rule. The fifth moves downward or upward one degree, more often downward to the root of the resolution chord.

The third of the dominant seventh chord is the leading-tone of the scale and would naturally move upward to the tonic, yet often it is desirable that it descend to the dominant note and thus add fulness to the resolution chord. This may be done unless the leading-tone is in some way made prominent, when disobedience to its natural tendency would be apparent. Such prominence is given whenever the leading-tone is an outer part, or whenever the bass descends to the new root in similar motion to the leading-tone's descent, if made, (thereby causing a concealed fifth, vide sec. 35), or whenever, having been preceded by the dominant note, the leading-tone by its descent would be both preceded and followed by *accented* dominant notes. Hence the

d. Rule. The third must ascend one degree to the new root whenever it is an outer voice or is otherwise made prominent. Excepting such cases it may, if desirable, descend two degrees.

In addition to these rules for resolution it is necessary to the best harmonic effect that care be exercised in introducing the chord.

1.) Sometimes in order to avoid consecutive fifths the fifth of the chord must be omitted and the root doubled; though an imperfect fifth following a perfect fifth is allowable, vide sec. 35.

2.) The dissonant seventh may be approached in any way *except by skip from above.* This latter, too, is allowed by some writers, in advanced work.

35. In connection of chords we frequently run across a fault, usually unimportant, but when combined with other faults often noteworthy, namely that of the concealed fifth or octave. In the last section such a fault was mentioned. To understand its significance one must have in mind the part which the interval of the fifth plays in the structure of chords.

The perfect fifth, when fifth of a chord, is chiefly valuable as an enforcement of the effect of the root.

That the fifth does thus enforce the root is due to the physical complexity of sound. This complexity can readily be observed in the low tones of an ordinary piano. For example, striking C and holding the key down, with close attention one can observe as part of this single tone its octave c, the fifth above, g, the double octave $\underline{c}$, the major third higher $\underline{e}$, the fifth $\underline{g}$. a rather low ♭$\underline{b}$, the $\underline{\underline{c}}$ and an indefinite extension to the series still higher. The series as a whole is called the Harmonic Chord of Nature. It will need a very acute ear to detect higher pitches in this series than $\underline{g}$. The lower sounds will be observed to give the effect, as part of a single note, of a full major triad with root overpoweringly predominant, fifth next and third faintest. This fact furnishes a physical reason for many of the effects of music.

For instance, it gives reason for the restfulness of the major triad, which is thus seen to be but an enlarged projection of a single tone ; for the satisfaction when the major triad in sounding has root most prominent, fifth next, and third least, a proportion to which we are trained by nature from earliest years ; for the possibility of omitting the perfect fifth and doubling the root in chords, since the perfect fifth will supply itself through the sounding of the root ; for the persistency of the perfect fifth (and fourth) in all forms of scale ; for the power of the perfect fifth to define a chord, by emphasis of its root. It is from this last fact that the objection to consecutive and concealed fifths takes its force.

Chords which are independent, as major and minor triads are, need certain common ground if they are to connect with one another smoothly. This common ground is usually to be found in the note or notes of union between them. Lacking notes of union, the possibility of smoothness must rest in the naturalness and prominence of the melodies involved. Thus as it were covering up the real independence and disunion of the chords.

But sounding of root and fifth in fundamental position in both chords with the same two voices emphasizes, on the contrary, most strongly the independence and disunion of the chords, *hence is always to be avoided.*

The usual device for avoiding parallel fifths in chords having no note of union is the use of motion contrary to the bass, which always serves to call attention to the melodies rather than to the harmonies. With chords having notes of union parallel fifths can only occur through disregard of the rules of chord connection already given.

Other fifths than the perfect fifth do not define the chord in like manner, and can. follow one another without producing the unpleasant sense of disunion. But even when the first fifth is not perfect, if the second fifth *is*, the unpleasantness will be manifest, for a sense of disunion will rise from the sharply defined second chord. Hence the rule already given forbidding a perfect fifth to follow an imperfect.

The same unpleasant sense of disunion will appear, much less marked, however, if *any interval* be followed in similar motion by a perfect fifth. This effect is what is called a **Concealed Fifth,** from the conception that, since all melodic skips are at basis abbreviated scale passages, parallel fifths are concealed in such a progression. It is well to avoid this fault if by the prominence of the voices making it (e. g., outer voices or voices that make wide skips) it would attract notice. Yet the objectionableness of it is comparatively small except in conjunction with other errors, where it assists to forbid the faulty progression.

These rules against consecutive and concealed fifths are usually coupled with like prohibition of consecutive and concealed octaves. The reasons for forbidding the latter however are altogether different, resting mainly upon the loss of independent melody in consecutive octaves, and upon the general melodic weakness of similar motion.

36. The rules given for the voice movements in resolution of the Dominant Seventh chord are applied also to the resolution of most of the other seventh chords, though none of these latter have any such strong leaning toward the chord thus taken as resolution. It is in absence of such tendency that these chords move by analogy of the dominant seventh resolution, passing to a triad whose root is at the fourth above the seventh chord root, the seventh itself being still regarded as a tendency note downward.

All of these latter chords are harsher in sound, and since they are accordingly used more sparingly they have been named the **Subordinate or Collateral Chords of the Seventh,** in distinction from the Principal Chord of the Seventh upon the Dominant. Special care must be exercised in the introduction of the dissonant seventh, because of the harsher harmony. *The best introduction is through a note of union* (this is technically called Preparation of the Seventh); or the seventh may come diatonically, i. e., from the degree above, or from the degree below. *But a skip to it from either direction is forbidden.*

37. When a seventh chord is followed by the resolution chord with its seventh, instead of by the triad alone, certain irregularities show themselves. A simple rule for such cases is

Rule. Introduce and resolve each seventh and root correctly, and let the other parts move to their nearest places in the new chord.

It will be observed that by following this rule in a series of seventh chords in fundamental position the fifth will be omitted in alternate chords.

NOTE.—In inversions of chords of the seventh it will never be necessary to omit or to double notes in four-part harmony.

38. **The Chord of the Seventh on the Leading-tone,** although occasionally following the rules of resolution already given and moving to the triad on mediant, usually is mastered by the inherent tendency of the Leading-tone triad and resolves to the Tonic triad. It will ultimately be seen in our study that *all chords* containing the leading-tone triad resolve naturally to the tonic triad,

In this resolution of the Leading-tone Seventh Chord

Rule. **a.** The root ascends one degree to tonic.

b. The seventh descends one degree to dominant.

c. The other two parts so move as to avoid parallel fifths.

This last section of the rule will be seen to prevent the third from descending if the seventh lies above it, and to prevent the fifth from ascending if the root lies below it. Otherwise either note is free to ascend or descend one degree. The *root* and the *seventh* are *tendency notes*, having invariable resolutions.

This chord in both major and minor scales is more harmonious than any seventh chord except that of the Dominant. The introduction of its seventh is therefore much freer, being limited only in the minor scale by the danger of an augmented interval.

Note.—Since the fifth of this chord is diminished none of its notes can be omitted or doubled in four-part harmony.

The minor scale form of the Leading-tone Seventh Chord is particularly pleasant to the ear and flexible in its use. It has received the name of the **Diminished Seventh Chord**: it has three dissonances,—two diminished fifths and the diminished seventh. Beside the natural resolution given above this chord can connect itself in a great variety of ways with other chords. These other uses, which may be conveniently termed irregular, are best studied later, vide sec. 59.

EXERCISES.

1. $\frac{2}{2}\quad \text{I}- \mid \text{IV}\ \overset{7}{\text{V}} \mid \text{I}\ \textsc{ii} \mid \overset{6}{\text{V}}\ \text{I} \mid \textsc{ii}\ \overset{7}{\text{V}} \mid \text{I}- \,\|$

Write in F^3, in ♭E^5.

2. $\frac{2}{2}\quad \text{I}\ \overset{6}{\text{V}} \mid \text{I}\ \overset{6}{\text{IV}} \mid \underline{\overset{\substack{6\\4}}{\text{I}}\ \overset{7}{\text{V}}} \mid \text{I}\ \overset{6}{\textsc{ii}} \mid \overset{\substack{6\\4}}{\text{I}}\ \overset{7}{\text{V}} \mid \text{I}- \,\|$

In B^3, in E.

3. $\frac{2}{2}\quad \textsc{i}\ \overset{6}{-} \mid \overset{6}{\textsc{ii}}{}^{\circ}\ \overset{7}{\text{V}} \mid \textsc{i}\ \textsc{iv} \mid \underline{\overset{\substack{6\\4}}{\textsc{i}}\ \text{V}} \mid \overset{6}{\textsc{i}}\ \ \textsc{i} \mid \textsc{iv}\ \textsc{ii}^{\circ} \mid \overset{\substack{6\\4}}{\textsc{i}}\ \overset{7}{\text{V}} \mid \textsc{i}- \,\|$

In b, in a^5, in g^3.

4. $\frac{2}{2}\quad \text{I}- \mid \overset{6}{\text{I}}\ \overset{\substack{4\\3}}{\text{V}} \mid \text{I}\ \overset{6}{-} \mid \text{V}\ \overset{\substack{6\\5}}{-} \mid \text{I}\ \overset{6}{\text{IV}} \mid \underline{\overset{\substack{6\\4}}{\text{I}}\ \overset{7}{\text{V}}} \mid \text{I}- \,\|$

In A^3, in F^5, in ♭D.

5. $\frac{2}{2}\quad \textsc{i}\ \overset{\substack{4\\3}}{\text{V}} \mid \overset{6}{\textsc{i}}\ \overset{6}{\textsc{iv}} \mid \text{V}\ \overset{2}{-} \mid \overset{6}{\textsc{i}}\ \textsc{iv} \mid \overset{\substack{6\\4}}{\textsc{i}}\ \overset{8\,7}{\text{V}} \mid \textsc{i}- \,\|$

In ♯f^5, in ♭b^3, in e.

6. $\frac{2}{2}\quad \textsc{i}\ \overset{\substack{6\\5}}{\text{V}} \mid \textsc{i}\ \overset{6}{-} \mid \text{V}\ \overset{2}{-} \mid \overset{6}{\textsc{i}}\ \overset{\substack{4\\3}}{\text{V}} \mid \textsc{i}\ \overset{6}{\textsc{ii}}{}^{\circ} \mid \underline{\overset{\substack{6\\4}}{\textsc{i}}\ \overset{7}{\text{V}}} \mid \textsc{i}- \,\|$

In ♯c^3, in c, in f^5.

7. $\frac{2}{2}\quad \text{I}\ \overset{6}{-} \mid \overset{7}{\textsc{ii}}\ \text{V} \mid \overset{7}{\textsc{iii}}\ \textsc{vi} \mid \textsc{ii}\ \overset{\substack{6\\5}}{-} \mid \text{V}\ \overset{7}{-} \mid \text{I}- \,\|$

In D, in ♯F^5, in ♭A^3.

8. $\frac{2}{2}\quad \text{I}\ \overset{6}{-} \mid \overset{7}{\textsc{ii}}\ \overset{7}{\text{V}} \mid \overset{7}{\text{I}}\ \overset{7}{\text{IV}} \mid \overset{7}{\textsc{vii}}{}^{\circ}\ \overset{7}{\textsc{iii}} \mid \overset{7}{\textsc{vi}}\ \overset{7}{\textsc{ii}} \mid \overset{7}{\text{V}}\ \text{I} \mid \overset{6}{\textsc{ii}}\ \overset{8\,7}{\text{V}} \mid \text{I}- \,\|$

In E, in ♭B^3.

9. $\frac{2}{2}\quad \textsc{i}\ \overset{6}{\textsc{iv}} \mid \overset{\substack{6\\4}}{\textsc{i}}\ \overset{2}{\text{V}} \mid \overset{6}{\textsc{i}}\ \overset{7}{\textsc{ii}}{}^{\circ} \mid \overset{7}{\text{V}}\ \textsc{i} \mid \overset{7}{\textsc{ii}}{}^{\circ}\ \overset{7}{\text{V}} \mid \textsc{i}- \,\|$

In a^3, in d.

10. $\tfrac{2}{2}\quad \mathrm{I}\ \overset{\substack{4\\3}}{\mathrm{V}} \mid \overset{6}{\mathrm{I}}\ \mathrm{IV} \mid \overset{7}{\mathrm{ii}}\ \mathrm{V} \mid \mathrm{I}\ \overset{7}{\mathrm{vii}}{}^{\circ} \mid \mathrm{I}\ \overset{6}{-} \mid \overset{\substack{6\\4}}{\mathrm{I}}\ \overset{7}{\mathrm{V}} \mid \mathrm{I}- \|$

In A^3, in ♭G^5.

11. $\tfrac{2}{2}\quad \mathrm{i}\ \overset{6}{\mathrm{vii}}{}^{\circ} \mid \overset{6}{\mathrm{i}}\ \ \mathrm{i} \mid \overset{7}{\mathrm{vii}}{}^{\circ}\ \mathrm{i} \mid \overset{7}{\mathrm{ii}}{}^{\circ}\ \mathrm{V} \mid \overset{7}{\mathrm{vii}}{}^{\circ}\ \mathrm{i} \mid \overset{\substack{6\\4}}{\mathrm{i}}\ \overset{7}{\mathrm{V}} \mid \mathrm{i}- \|$

In e, in b^3, in g^5.

12. $\tfrac{3}{2}\quad \mathrm{i}\ \mathrm{VI}\ \overset{6}{\mathrm{ii}}{}^{\circ} \mid \mathrm{V}\ \overset{7}{\mathrm{vii}}{}^{\circ}\ \mathrm{i} \mid \mathrm{VI}\ \ \mathrm{V}\ \overset{6}{\mathrm{i}} \mid \overset{\substack{4\\3}}{\mathrm{vii}}{}^{\circ}\ \overset{6}{\mathrm{i}}\ \ \mathrm{i} \mid \overset{7}{\mathrm{ii}}{}^{\circ}\overset{\substack{4\\3}}{-}\overset{7}{\mathrm{V}} \mid \mathrm{i}-- \|$

In c, in ♭b^3, in ♯g^5.

13. $\tfrac{3}{2}\quad \mathrm{I}\overset{2}{-}\overset{6}{\mathrm{IV}} \mid \overset{6}{\mathrm{V}}\overset{\substack{6\\5}}{-}\mathrm{I} \mid \overset{\substack{6\\5}}{\mathrm{ii}}\mathrm{V}\overset{\substack{6\\5}}{-} \mid \mathrm{I}\overset{2}{-}\overset{6}{\mathrm{IV}} \mid \underline{\overset{\substack{6\\4}}{\mathrm{I}}\ \mathrm{V}\overset{2}{-}} \mid \overset{6}{\mathrm{I}}\ \overset{\substack{4\\3}}{\mathrm{V}}\ \mathrm{I} \mid \overset{6}{\mathrm{ii}}\overset{\substack{6\\4}}{\mathrm{I}}\ \overset{7}{\mathrm{V}} \mid \mathrm{I}-- \|$

In ♭A^3, in ♭E^5.

14. $\tfrac{2}{2}\quad \mathrm{i}\ \overset{6}{-} \mid \overset{\substack{6\\5}}{\mathrm{ii}}{}^{\circ}\ \mathrm{V} \mid \underline{\overset{7}{\mathrm{vii}}{}^{\circ}\ \overset{\substack{6\\5}}{\mathrm{V}}} \mid \mathrm{i}\ \mathrm{VI} \mid \mathrm{V}\ \overset{2}{-} \mid \overset{6}{\mathrm{i}}\ \ \mathrm{i} \mid \overset{\substack{6\\5}}{\mathrm{ii}}{}^{\circ}\overset{8\ 7}{\mathrm{V}} \mid \mathrm{i}- \|$

In a^3, in g^5, in ♭e.

NOTE.—For the use of figures consult note with exercises of chapter I.

CHAPTER III.

SPECIAL USES OF CHORDS AND IRREGULARITIES IN THEIR TREATMENT.

39. **The Sequence** is a musical device that, strictly speaking, is purely melodic, but by extension to all the melodies of a series of chords can also be treated as harmonic. Sequence in a single melody is the repetition of all the characteristic features of that melody, as the value of note, place of accent, &c., twice or more times, each repetition starting at a new pitch which is always at the same interval degree above or below the previous utterance of the melody which the first repetition takes above or below the original melody. If the first repetition lies above the original melody (called the model) the sequence must continue its ascent; if the first repetition lies below the original melody the sequence will descend.

A sequence may be strict or free in its repetition of the intervals used: i. e., a third must in repetition be a third, but a major third may repeat as a minor third. A strict sequence would necessitate change of key for each repetition, in most cases. A free sequence can be written throughout in one scale. When each voice in a series of chords forms a free sequence melody the effect is most interesting through the variety of the chords involved, on the different scale degrees.

Because the melodic effect produced by the sequence is so desirable, a certain laxity in application of the rules of chord-connection to the chords of a sequence has been permitted. Notes of union are often abandoned; tendency notes (as the leading-tone), because the tendency is overruled in the sequence, are often doubled ; chords occasionally resolve in what would else be unnatural ways. But even here the parallel fifth and octave and the augmented interval are forbidden, their ill effect being accentuated rather than otherwise by the repetition.

It is to be noted that the positions of chords (and of course the figurings of the bass) in every repetition are identical with those of the model.

40. **The Cadence** is the harmonic means of producing that sense of repose necessary to the close of a composition or portion of a composition. If the close is to be final the last chord must be the Tonic Triad on the principal accent of the measure and with the keynote prominent, it being certainly the bass and if possible also the soprano. The most valuable chord to precede the tonic is the Dominant; the next valuable, the Subdominant. All these chords should be in fundamental position.

The effect of cadence will be less strong if either chord in the cadence be an inversion, or if the last soprano be not the key-note. Any such alteration from the strongest form of cadence is called an **Imperfect Cadence** in distinction from the first arrangement of chords mentioned, called a **Perfect Cadence.** Cadences using the dominant and tonic chords are called **Authentic**, those using subdominant and tonic are called **Plagal Cadences** (names descended from early church scales). The dominant chord often uses its seventh, the sub-dominant never. These four forms of cadence may be symbolized, as follows :—

Perfect Authentic Cadence — $\overset{\substack{(7)\\5\\3}}{\mathrm{V}}_{(7)} \mid \overset{8}{\mathrm{I}}.$

" **Plagal** " — $\overset{\substack{5\\3}}{\mathrm{IV}} \mid \overset{8}{\mathrm{I}}.$

Imperfect Authentic " — $\mathrm{V}_{(7)} \mid \mathrm{I}.$

" **Plagal** " — $\mathrm{IV} \mid \mathrm{I}.$

Another mode of producing the cadence effect, yet not very decidedly, is to use the dominant chord as if for the Authentic cadence, but to follow it with some other consonant triad not the tonic; the sub-mediant triad is the most valuable for this purpose. This is called the **Interrupted, False, or Deceptive Cadence.** When the dominant seventh chord occurs in this cadence the seventh itself can usually be resolved according to rule, the other parts will have to follow the law of melody stated in section 23.

The progression V vi (VI) is so common, even when not in cadence position, that it has received the name of the **Deceptive Progression.**

The cadence effect may also be produced by the Dominant Triad upon accent preceded by some chord that connects naturally with it, as the super-tonic triad or seventh chord. This cadence is called the **Half Cadence,** from the notion that it is an incomplete portion of the Authentic Cadence. The cadence is, however, complete, its unfinished sound being due to the lack of finality in the Dominant chord itself.

Still other forms of cadence are used, but never so generally as to have place in a classification.

The Authentic cadence is by far the most common. The use of the Plagal cadence is confined largely to the Amen.

Although the cadence is determined by the last two chords, yet certain chords lead so pointedly to the dominant chord as to produce the cadence feeling before its final utterance. Such chords are said to extend the cadence. A few of the chords making such extension are

1.) The $^6_4$ chord of the tonic : here the bass becomes note of union with the bass of the dominant chord.

2.) The supertonic triad or seventh chord, which resolves naturally to the dominant chord.

3.) The subdominant triad ; thus combining the plagal and authentic effects.

When two or all three of these chords are used in extension the $\overset{6}{\overset{4}{\text{I}}}$ comes best immediately before V.

41. Besides triads and seventh chords there are various combinations of musical sounds making apparently other chords. All of these are by some writers treated as irregular utterances of the chords already discussed; by many, however, they are regarded as real chords having their own laws of motion. We shall here present but one of these chords as a new one, namely the **Chord of the Dominant Ninth** (in major or minor scale): in certain of its uses it seems to exhibit independent structure. Its full statement is root, third, fifth, seventh and ninth; but in four-part harmony the fifth is always omitted. Like all other chords containing the leading-tone triad (cf. sec. 38) it resolves to the Tonic Triad. The progressions of the root and seventh follow the rules for the resolution of the dominant seventh chord; the progressions of the other notes follow the rules for the leading-tone seventh chord. In the Dominant Ninth chord the third, seventh and ninth are *tendency notes* and have invariable resolutions.

42. The desire for restfulness in music is met by the use of chords that naturally succeed and resolve into one another. The desire for variety, however, is constantly impelling musicians to find new combinations that without violating the essential unity of the music shall give wider choice of expression. This inclination has already appeared in the use of successive seventh chords without the intervening triad, and in the deceptive progression. The study of harmony from this point onward is mainly an examination of the possible new combinations and alterations of the two classes of harmonies already considered, namely, triads and seventh chords. Most of the harmonic effects that are charming to modern ears lie within this new field, what are called 'regular' progressions, being comparatively dull and uninteresting, because so universal. Yet it should be remembered that those chords and combinations of chords that are simple and natural must always be the foundation of part music, and that a

thorough mastery of these simple effects is absolutely needful to a right use of the more elaborate and unusual.

NOTE.—The use of the words 'regular' and 'irregular' to indicate respectively the usual, natural movements of chords and the unusual *though not unsatisfactory* movements will be justified if it serves to emphasize the fact that irregular progressions, while delightful by way of variety, should not supercede the regular progressions to any wide extent (cf. sec. 54, and sec. 59, last paragraph.)

Whenever the natural resolutions are set aside, the law of melody enunciated at the outset of our study comes into prominence. A somewhat fuller statement of this may therefore not be out of place here.

The decision of what is musically satisfactory, both as to melody and as to harmony, rests in last analysis upon a cultivated musical ear, i. e., is truly a matter of æsthetics. But such cultivation is by no means arbitrary. The educating power of the Harmonic Chord of Nature has already been suggested (vide sec. 35). In many more particulars than was there stated this natural music has served to guide the growing musical sense of civilization in its choice of scale notes and of the underlying material of music.

But the construction of a melody out of its possible material is restricted first of all by one very important consideration, namely, the unwillingness of the mind to accept a succession of sounds that cannot be readily located with reference to each other ; e. g., strike c, ♯f, b, and $\underline{\text{f}}$. This reluctance led earliest melodies to be formed almost solely by diatonic succession, each sound being easily reached and known from the last. When skips came into use they were such that the tones could at once be located as the limit notes of previously well known scale progressions, the skip seeming a sort of abbreviated scale passage ; and, since the skips found in the harmonic chord are easily made and readily connected by scale passage, these came earliest into vogue and even now are the skips most frequently met. In fact until the science of harmony had reached the stage where dissonant chords were familiar and had thus furnished recognizable intervals other than concordant ones, no skips appeared in melody save those of the harmonic chord. In modern music also the irregularly formed chords, so fast as they are becoming established in mind, furnish intervals that are legitimate subject of melodic skip.

But even now the mind recognizes the alertness necessary to apprehend skips and finds satisfaction in a return to scale succession after such melodic strides, prescribing this almost strictly after any unusual movement, and wearying very soon of a succession of even the commonest skips. So, too, when a wide skip has occurred it is deemed most satisfactory to have the melody make at least partial attempt to bridge its chasm by a scale return toward the starting note. It is due, partly at least, to this feeling that the objection to augmented intervals is so strong, since the notes of an augmented interval are always tendency notes away from each other, rather than toward each other; cf. sec. 44.

Such being the general law of melody, its special application in the uniting of chord to chord is altogether by way of restriction; for the multiplication of voices (each chord usually appearing in four parts) at once increases the difficulty in following the movements of the melodies. None therefore but the simplest skips can occur without taxing the mind severely, especially in the subordinate parts. Thus, next to notes of union, melodies that make use of scale passages, diatonic or chromatic, are the most valuable means of preserving the unity of chords. Tendency notes, also, since they hint so strongly of the sound to follow, serve most perfectly the same end. A skilful use of tendency notes, indeed, adds more to the beauty of chord successions than any one other device.

43. One of the simplest means to variety is to modify or to change the resolution of a seventh chord.

Modifications may be made

a. by interpolating a triad which contains the note that was seventh, between it and the resolution chord, thus delaying the resolution.

Remark. A seventh chord may be repeated before its resolution, and in the second chord the voices be newly distributed, vide sec. 23. This is not however an irregular use of the chord.

b. by allowing several such chords, all containing the note that was seventh, to succeed each other, until the tendency of the note, held as note of union, is lost sight of and without resolution it is made even to ascend or move by skip to a new note.

Remark. This is in reality a violation of melodic sense, and the finest musical ear will not enjoy it.

c. by exchanging the movements of root and seventh. This usually occurs between bass and an upper part, with the chord in fundamental position. The bass descending to the note (third of the resolution triad) which the seventh should take, forces the seventh to ascend in order to avoid the prominent doubling of the third, accentuated by the concealed octave, which itself is unusually bad upon the resolution tone of a tendency note.

Changes may also be made

d. by resolving a seventh chord to some other triad than the one naturally to be expected, as from V_7 to III, or from II_7 to VI. In such resolution the law of melody guides the voices, the seventh itself and other tendency notes, if present, being first cared for, and the remaining notes moving then to the nearest places available in the new chord. The deceptive progression is a resolution of this character.

e. by resolving the chord to a chord of a new key. In such a resolution the seventh itself may even ascend if the voices of the chord make good melodic connection with the new chord.

44. Another means to variety of both melody and harmony is the alteration of some note of a chord through the use of an accidental. This while giving a new effect of harmony creates in the altered note a tendency and helps the succession of the next chord. The rule for such alteration is as follows :

Rule. A note chromatically altered to the sound above the scale tone *tends upward* to the next scale tone. A note chromatically altered to the sound below the scale tone *tends downward* to the next scale tone.

NOTE.—It is in view of this tendency of extra-scale tones that the importance of a correct writing of chromatic scales (vide sec. 14) is seen. The notation itself should indicate the chromatic tendency. Modern writers therefore do not hesitate to freely introduce double sharps or double flats to express chromatic tones.

This alteration of a chord may serve but as preparation for another chord in the same key, or it may be a transitional chord to a new key.

45. A few of the chords thus altered have become so useful both as embellishments within a key and as transitional chords to new keys that they deserve special mention.

a. a minor triad altered by the chromatic raising of the root is given a decided tendency to the major triad upon the resolution tone of the chromatically altered note.

b. the same altered triad with diminished seventh added has the same tendency.

c. a major triad with minor seventh, altered by the chromatic lowering of its fifth, is given a decided tendency to the major triad upon the resolution tone of the chromatically altered note.

These chords above described are almost invariably used in a particular inversion and are best treated as special structures upon a given bass note. The following table displays the chords as thus framed, their names and their resolutions.

a. Italian Sixth.	b. German Sixth.	c. French Sixth.	Resolution.
Aug. 6th above bass.			Tendency note upward to root.
*Maj. 3d above bass.	**Perfect 5th above bass.	Aug. 4th above bass.	Major Triad.
*Maj. 3d above bass.			(usually V sometimes I)
Bass.			Tendency note downward to root.
6+	6+ 5	6+ 4 3	

* One or both of these thirds must lie below the augmented sixth, to avoid parallel fifths.

** This must be resolved before or after the bass of the chord, to avoid parallel fifths. It may be resolved before, by changing the chord to a French Sixth upon the same bass and then resolving the chord. It may be resolved after, by interpolating a $^6_4$ chord upon the new bass and then resolving the chord.

d. a diminished triad (II°) altered by the chromatic lowering of its root (thus making of it a major triad) tends strongly to the minor triad on the resolution tone of the altered root (I). Both of these chords must be inversions, however, to avoid parallel fifths. The altered chord is used as a sixth chord, and called the Neapolitan Sixth. The second is used as a sixth or a six-four chord.

EXERCISES.

NOTE.—Interrogations call for the regular resolution chords, which the student can readily apply.

1. $\frac{2}{2}\ \overset{3}{\mathrm{I}}\ \overset{6}{\mathrm{V}} \mid \mathrm{vi}\ \overset{3}{\mathrm{iii}} \mid \mathrm{IV}\ \overset{6}{\mathrm{I}} \mid \mathrm{ii}\ \overset{6}{\mathrm{V}} \mid \mathrm{I} - \|$

Sequence, in ♭B.

2. $\frac{4}{4}\ \overset{3}{\mathrm{I}}\ \overset{\substack{4\\3}}{\mathrm{V}}\ \mathrm{I}\ \overset{6}{\mathrm{IV}} \mid \mathrm{vii}^{\circ}\ \overset{\substack{4\\3}}{\mathrm{IV}}\ \mathrm{vii}^{\circ}\ \overset{6}{\mathrm{iii}} \mid$ (4 measures to be supplied) $\mid \mathrm{ii}\ \overset{6}{\mathrm{I}}\ \overset{6}{\mathrm{ii}}\ \overset{7}{\mathrm{V}} \mid \mathrm{I} - - - \|$

Sequence, in D.

3. $\frac{2}{2}\ \overset{3}{\mathrm{I}}\ \overset{2}{-} \mid \overset{6}{\mathrm{IV}}\ \overset{\substack{6\\5}}{-} \mid \mathrm{vii}^{\circ}\ \overset{2}{-} \mid \overset{6}{\mathrm{iii}}\ \overset{\substack{6\\5}}{-} \mid$ (8 measures to be supplied) $\mid \mathrm{ii}\ \overset{2}{-} \mid \overset{6}{\mathrm{V}}\ \overset{7}{-} \mid \mathrm{I} - \|$

Sequence, in ♭E.

4. $\frac{2}{2}\ \overset{5}{\mathrm{I}}\ \overset{7}{-} \mid \underline{\overset{8}{\mathrm{ii}}\ \overset{7}{-} \mid \overset{\substack{4\\3}}{\mathrm{V}}}\ ? \mid \overset{7}{\mathrm{vi}}\ \overset{7}{?} \mid \overset{7}{?}\ \mathrm{vi} \mid \overset{\substack{6\\5}}{\mathrm{ii}}\ ? \mid ? - \|$

In ♭D.

5. $\frac{2}{2}\ \mathrm{i}\ \overset{6}{-} \mid \underline{\overset{\substack{6\\4}}{-}\ \overset{\sharp}{\mathrm{V}}} \mid \mathrm{VI}\ \overset{2}{-} \mid \underline{\overset{\substack{6\\5}}{\mathrm{ii}^{\circ}}\ \overset{\substack{\cancel{4}\\2}}{\mathrm{V}}} \mid \overset{6}{?}\ \mathrm{ii}^{\circ} \mid \overset{\sharp}{\mathrm{V}}\ \mathrm{VI} \mid \overset{\substack{4\\6}}{\mathrm{i}}\ \overset{\sharp}{\mathrm{V}} \mid ?- \|$

In e.

6. $\frac{2}{2}\ \mathrm{I} - \mid \overset{\substack{6\\5}}{\mathrm{V}}\ \overset{\substack{6\\4}}{\mathrm{IV}} \mid \overset{\substack{4\\3}}{\mathrm{V}}\ \overset{\substack{6\\5}}{-} \mid \mathrm{I}\ \overset{2}{-} \mid \mathrm{vi}\ \overset{2}{-} \mid \overset{\substack{6\\5}}{\mathrm{ii}}\ \overset{8\ 7}{?} \mid \mathrm{vi}\ \overset{\substack{6\\5}}{\mathrm{ii}} \mid \underline{\overset{\substack{6\\4}}{\mathrm{I}}\ \overset{7}{?}} \mid ? \|$

In ♯F.

7. $\frac{2}{2}\ \mathrm{i} \mid \overset{7}{\mathrm{ii}^{\circ}}\ \overset{6}{\mathrm{i}} \mid \overset{\substack{6\\5}}{\mathrm{ii}^{\circ}}\ \overset{\substack{6\\4}}{\mathrm{i}} \mid \overset{\substack{4\\3}}{\mathrm{ii}^{\circ}}\ \overset{\substack{6\\4}}{\mathrm{i}} \mid \overset{\substack{7\\\natural}}{\mathrm{V}}\ \overset{6}{\mathrm{i}} \mid \overset{6}{\mathrm{ii}^{\circ}}\overset{\substack{4\\3}}{-} \mid \overset{\substack{6\\4}}{\mathrm{i}}\ \overset{\substack{7\\\natural}}{?} \mid ? \|$

In ♭b.

8. $\frac{2}{2}\ \overset{3}{\mathrm{I}}\ \overset{6}{-} \mid \overset{7}{\mathrm{ii}}\ \overset{7}{?} \mid ?\ \underline{\overset{\substack{6\\5}}{\mathrm{ii}} \mid \overset{2}{?}}\ \overset{6}{?} \mid \underline{\overset{7}{\mathrm{IV}}\overset{\substack{4\\3}}{\mathrm{vii}^{\circ}}} \mid \underline{\overset{6}{\mathrm{I}}\ \overset{\substack{6\\5}}{\mathrm{vi}} \mid \overset{2}{\mathrm{ii}}}\ \overset{\substack{6\\5}}{?} \mid \mathrm{I}\ \overset{\substack{4\\3}}{\mathrm{ii}} \mid \overset{\substack{6\\4}}{?}\ \overset{7}{?} \mid ?- \|$

In ♭G.

9. $\tfrac{2}{2}\ \overset{5}{\mathrm{I}} \mid \mathrm{IV}\ \overset{9}{\mathrm{V}} \mid \mathrm{I}\ \overset{2}{-} \mid \overset{6}{?}\ \overset{\substack{6\\5}}{\mathrm{II}} \mid \underline{\overset{9}{\mathrm{V}}\ \overset{\substack{6\\4}}{\mathrm{I}} \mid \overset{7}{\mathrm{V}}}\ \overset{7}{\mathrm{VII}^\circ} \mid ?\ \underline{\overset{9}{\mathrm{V}} \mid \overset{6}{\mathrm{III}}\ \overset{7}{\mathrm{V}}} \mid ? \,\|$

In B.

10. $\tfrac{2}{2}\ \underline{\overset{5}{\mathrm{I}}\ \overset{\not{5}}{—} \mid \overset{\substack{6\\4}}{\mathrm{IV}}\ \overset{\substack{\sharp 8\\-\\-}}{—}} \mid \underline{\overset{7}{\mathrm{VII}^\circ}\ \overset{\flat 7}{—} \mid \overset{\substack{6\\5}}{\mathrm{V}}\ \overset{\substack{4\\3}}{—}} \mid ?\ \overset{2}{—} \mid \overset{7}{\mathrm{VI}}\ \overset{\substack{\flat 7\\\flat 5}}{—} \mid ?\ \overset{\substack{\flat 6\\4\\2}}{—} \mid \overset{6}{?}\ \overset{\substack{6\\5}}{—} \mid$

$\overset{5}{?}\ \overset{\not{5}}{—} \mid \overset{7}{\mathrm{IV}}\ \overset{\substack{6\\5\\\flat 3}}{\mathrm{II}} \mid \overset{6}{\mathrm{III}}\ \overset{7}{\mathrm{V}} \mid ?- \,\|$

In F.

11. $\tfrac{2}{2}\ \overset{8}{\mathrm{I}}\ \overset{\natural 3}{—} \mid \mathrm{V}\ \overset{2}{—} \mid \overset{6}{?}\ \overset{\substack{6\\\sharp}}{—} \mid \mathrm{IV}\ \overset{6}{\mathrm{I}} \mid \mathrm{II}\ \overset{\substack{7\\7\ \flat 5}}{—} \mid \overset{3}{?}\ \overset{2}{—}\ \overset{6}{\mathrm{I}} \mid \mathrm{II}\ \overset{\flat 5}{—} \mid \overset{\substack{6\\4}}{\mathrm{I}}\ \overset{\substack{\natural 6\\-}}{}\ \overset{8\ 7}{\mathrm{V}} \mid ?- \,\|$

In D.

12. $\tfrac{2}{2}\ \mathrm{I}\ \overset{7}{\mathrm{II}^\circ} \mid \overset{6}{\mathrm{I}}\ \overset{\not{6}}{6^+} \mid \overset{\sharp}{\mathrm{V}}\ \overset{\substack{\not{4}\\2}}{-} \mid \overset{6}{?}\ \overset{6}{\mathrm{II}^\circ} \mid \overset{\substack{6\\4}}{\mathrm{I}}\ \underset{5}{\overset{\substack{\not{6}\\5}}{6^+}} \mid \underset{\substack{4\\3}}{\overset{\substack{\not{6}\\4\\3}}{6^+}}\ \overset{\sharp}{\mathrm{V}} \mid \overset{6}{\mathrm{II}^\circ}\ \overset{\substack{7\\\sharp}}{?} \mid ?- \,\|$

In b.

13. $\tfrac{2}{2}\ \mathrm{I} \mid \underset{5}{\overset{\substack{\not{6}\\5}}{6^+}}\ \overset{\substack{6\\4}}{\mathrm{I}} \mid \overset{\natural}{?}\ \overset{\substack{\not{4}\\2}}{—} \mid \overset{6}{\mathrm{I}}\ \overset{\not{6}}{6^+} \mid \overset{\natural}{\mathrm{I}}\ \overset{\substack{\flat 7\\-}}{—} \mid \mathrm{IV}\ \underline{\overset{\substack{6\\\natural}}{\mathrm{III}^+} \mid \overset{\substack{7\\\natural}}{\mathrm{V}}\ \overset{\substack{6\\4}}{\mathrm{I}} \mid \overset{\substack{9\\7\\\natural}}{\mathrm{V}}\ \overset{\underline{8}}{—}} \mid \mathrm{I} \,\|$

In c.

14. $\tfrac{2}{2}\ \overset{3}{\mathrm{I}}\ \overset{7}{\mathrm{VII}^\circ} \mid ?\ \overset{\flat 6}{\mathrm{N6}} \mid \overset{\substack{6\\4}}{\mathrm{I}}\ \overset{\substack{\not{4}\\2}}{\mathrm{V}} \mid \overset{6}{?}\ \underset{\substack{4\\3}}{\overset{\substack{\not{6}\\4\\3}}{6^+}} \mid \overset{\sharp}{\mathrm{V}}\ \overset{\substack{\not{4}\\2}}{-} \mid \overset{6}{?}\ \overset{\flat 6}{\mathrm{N6}} \mid \overset{6}{?}\ \overset{\substack{\not{6}\\4\\3}}{\mathrm{V}} \mid \mathrm{I}- \,\|$

In d.

CHAPTER IV.

ON THE INHARMONIC MATERIAL OF MUSIC.

46. Musicians in their search for the beautiful in harmony have by no means restricted themselves to the regular, or even what may be termed the irregular succession of chords. It was thought, and rightly, that to insist upon a harmonic significance for every note in music would be to sadly fetter the wings of song. Yet liberty, even in music, is not license ; and the great artists who have been constantly freeing themselves from the burden of rules to which their contemporaries have submitted, were in reality acknowledging a deeper and more universal law, the law of melody, for which alone harmony exists.

The use of inharmonic material has almost exactly followed historically the steps by which melody itself gained its freedom. A tone unharmonized would at first appear only by way of passage from one harmonized tone to another, filling in a diatonic or chromatic melody. Then a tone harmonious in one chord might thrust itself into the next as inharmonious, provided its melodic character be pronounced and the continuance of the melody fall into the harmony of the new chord. Then an inharmonious tone might appear with a chord, not retained from the preceding chord, but even coming by skip, if its melodic character be pronounced and its tendency be satisfied with the following note. Such extra-harmonic voice movements could not obviate otherwise faulty progressions, of course, while they might actually create unpleasant motion ; a concealed fifth, for instance, by the filling in of its progressions with diatonic melody becoming parallel fifths.

It is plain therefore that a skilful use of the inharmonic material of music is evidence not only of a mastery of the harmonic material but also of a keen artistic sensibility.

47. When the melodic progression from a note of one chord to a note of the next is embellished by the use of a scale passage of unharmonized tones, such tones are called **Passing tones.**

Passing tones may be either chromatic or diatonic ; that which is essential to a correct use of them being

1.) That they make a true scale movement from chord tone to chord tone ;

2.) That they do not hinder recognition of the chords, for this reason appearing after one chord is struck and before the next (i e., upon the un-accent) ;

3.) That they do not produce faulty movements between the parts, this being best prevented, especially when a skip is to be filled, by contrary motion of the other voices.

a. A fault liable to occur with any use of inharmonic material is that a harmonic note shall sound simultaneously with the inharmonic tone that then passes into it. That a dissonance, which in this case is a second, shall end through the merging of one tone into the other is altogether unsatisfactory. Resolution of a second must be to a consonant third or fourth, by which each melody can be recognized to have taken its place in the consonance ; whereas the merging of one tone into the other causes a loss of individuality in the parts that leaves a confused sense of the disappearance of a dissonance without resolution.

Exception to this rule is occasionally found when the resolution tone is the bass, since it can successfully maintain itself against the dissonant tone after the manner of a pedal point, vide sec. 52.

b. Passing tones may appear in two, three, or even four voices at the same time. The difficulty of avoiding faulty movements and of retaining the effect of the original chords is, however, proportionately greater. When several such passing tones appear at once, since they do not belong to the harmony of the chords with which they are used, they create a decidedly harsh impression unless they harmonize well with one another. For this reason tones passing in consonant intervals, as in parallel thirds and sixths, are found most satisfactory.

c. When all four voices move by passing tones to another chord, the passing tones themselves, as they are harmonious, form what is called a **passing chord.** Such a chord is only to be distinguished from other chords by its unimportant place in the measure and its evident use to mediate between the preceding and the succeeding chords.

48. Similar to the passing tone is the **Alternating or Changing Tone.** This is an unharmonized melodic tone introduced between a note and its repetition. It must therefore be a diatonic half or whole step from the harmonized note; for a greater interval would tend away from the repetition, vide sec. 44. Indeed when the alternating tone is a whole step below the harmonized note, tendency to return is seldom strong enough to be satisfactory.

a. Alternating tones may therefore be the scale note above a harmonized note (except the augmented 2nd), or the diatonic half step below.

b. Notes that belong to the harmony are also occasionally used as alternating tones, a melody introducing some other note of the same chord between repetitions of a chord note. Such harmonic notes could be taken and left by skip and would follow the regular rules of melody in this regard, vide sections 23 and 42.

c. Alternating tones may occur in two, rarely in three parts, at the same time. As with passing tones, such use is seldom good unless the alternating tones harmonize with one another.

The law of accent holds the same with these as with passing tones.

d. The use of both alternating tones successively between repetitions of a note produces what is called **the turn.** In modern music the upper alternating tone usually comes first.

Note.—For an interesting illustration of the contrary order, prefaced however by the upper alternating tone as grace note, see the well known Boccherini Minuet in A.

49. When a melody makes diatonic progression from chord to chord it is often possible to heighten the tendency effect of the melody by retaining the note of the first chord as an inharmonic tone in the following chord for a portion of its time, the discordant tone (a second, seventh, or ninth) then finding its natural resolution in the same note of the harmony to which it would otherwise have immediately gone. Such an effect is called a **Suspension**, the use of the final note being thought of as for the moment *suspended.*

As in the case of passing tones, that which is essential to a correct use of suspensions is

1.) That they preserve the true melodic motion ;
2.) That they do not hinder recognition of the chords ;
3.) That they do not produce faulty movements between the parts.

a. In order to preserve the melody the suspension must of course be both prepared and resolved in the same voice. The melodic balance is also retained best by lingering on the suspension *no longer* than the same sound has already appeared as a chord tone.

Also, since the suspension is a dissonance, even greater reluctance to admit a suspension with an upward *whole step* resolution will be felt than in case of an alternating tone ; only the half step upward suspension being plainly satisfactory.

b. Because of the strength of the tendency which the dissonant suspension creates, recognition of the real chords is helped rather than hindered by having the inharmonic tone come upon the accent, the very harshness of the accented suspension assisting to call attention to the harmonious resolution as the true chord. So universal is this that a suspension is felt to be weak and undecided unless it has at least a subordinate accent.

Suspensions are also in most cases found to be unsatisfactory when they are *not inharmonic tones*, but form with the rest of the parts real chords: e. g., suspension of the fifth of a triad in fundamental position. Such real chords may of course succeed each other, but they do not ordinarily find recognition as suspensions, the inharmonic element with its strong tendency to the suspended chord tone being wanting.

NOTE. Such real-chord suspensions are occasionally of rhythmic value, however, vide sec. 63. a.

c. Since suspensions are only melodic variations of chords, a faulty connection of the chords (e. g., parallel 5ths) cannot be remedied by suspension of one of the parts making the fault: the error is only delayed. In writing music the eye may fail to observe this fault, but a cultivated ear will not fail to hear it.

Certain faults may be created by a suspension.

a.) Two parts, which, were there no suspension, could double at unison in the second chord, are forbidden to seek the same note; for in that case the dissonant suspension and its resolution tone would be sounding together (cf. sec. 47, **a**, and note particularly the exception which holds also here.) But if the two notes so lie that both can be suspended and seek the same note together the fault is avoided.

Likewise, sounding a suspension with the upper octave of its resolution is unpleasant, the accented interval of a seventh (or ninth) suggesting another resolution than the actual one.

b.) Two parts doubled (at unison or octave) in the first chord are not at liberty to suspend together, since tendency notes may not be doubled.

c.) Occasionally the use of passing or alternating tones in some other part will forbid a suspension, or use of a suspension forbid other inharmonic tones, lest parallel fifths or octaves result.

d.) Suspensions may occur in two or three parts, and both descending and ascending suspensions at the same time. As with other inharmonic tones, such double or triple suspensions must harmonize with each other, as well as conform otherwise to all the laws of motion.

e.) Suspensions in all four parts (cf. passing chords) are only distinguishable from prolongations or repetitions of the preceding chord by the syncopation effect, due to retaining the old chord beyond the accent, and by the decided tendency of all four parts towards the new chord.

50. For the figuring of inharmonic notes including suspensions, vide sec. 17, especially 2.) and 3.)

But attention needs further to be called to certain abbreviations in the figuring of suspensions that are liable to introduce confusion.

The figuring 7 6 over a single bass note means the suspension of the root of a triad in 1st inversion ; i e., full figuring would be $\begin{smallmatrix}7\\3\end{smallmatrix}\,\begin{smallmatrix}6\\-\end{smallmatrix}$, not $\begin{smallmatrix}7\\5\\3\end{smallmatrix}\,\begin{smallmatrix}6\\-\end{smallmatrix}$. Also the figuring $\begin{smallmatrix}6\\5\end{smallmatrix}\,\begin{smallmatrix}-\\4\end{smallmatrix}$ over a single bass note means the suspension of the root of a triad in 2nd inversion ; i. e., full figuring is expressed, and would not be $\begin{smallmatrix}6\\5\\3\end{smallmatrix}\,\begin{smallmatrix}-\\ \\4\end{smallmatrix}$. The figuring 9 8 over a single bass note indicates the suspension of the root of a triad in fundamental position, not a ninth chord.

51. The strength of the tendency of these inharmonic tones renders them peculiarly well fitted to appear as limit notes of a melodic skip. Hence we find suspensions entering by skip without preparation ; or alternating or even passing tones entering by skip. Inharmonic tones thus freely introduced are called **Appoggiaturas.**

a. Except in their free entrance appoggiaturas obey the laws of motion already set forth. They may be used both upon the accent and away from it. But the melodic tendency of an inharmonic tone is stronger if it is accented ; so that the accented appoggiatura is on the whole more satisfactory. This is so manifest that inharmonic tones appearing *without skip* are felt to be appoggiaturas if they sound upon the accent or with the entrance of the chord (cf. sec. 47. 2.)).

b. A peculiar effect called the **double appoggiatura** is made by free entrance of first the lower and then the upper alternating tone (occasionally this order is reversed) belonging to a note, before the note itself has sounded ; i. e., a turn with the first two utterances of the main note omitted.

c. Appoggiaturas like other inharmonic tones may appear in two or even three parts, but the fact of the skips in their introduction renders such effects more difficult to handle and with rare exceptions less enjoyable than single appoggiaturas. It may be stated as generally true that unusual skips in one voice part are the more beautiful when the other parts move simply and naturally.

52. When passing tones, alternating tones or suspensions appear in three of the four voices, since such tones are required to harmonize with one another the true note of the chord might easily seem to be the inharmonious tone. Such an illusion would be heightened by the continuance, after the resolution chord, of other three part passing chords, suspensions, &c., upon the same real chord-tone.

This use of a **stationary tone** is often met, and is particularly valuable if the tone sustained is itself an important note, as Tonic or Dominant, which will serve to emphasize the impression of the key in use and prepare well the final return of the series to a resolution chord. It has always been a favorite means of extending the cadence effect in large organ compositions, like fugues; and since the cadence is best written with chords in fundamental position the stationary dominant or tonic is usually in the bass and, being readily held by a pedal, has gained the name of **Organ-point**(note) or **Pedal-point.**

Considerable freedom is always given to the chords accompanying such a sustained tone. They need not always be tendency chords to the chord of the organ tone, but must preserve good melodic progressions among themselves and never for many successive chords be out of harmony with the sustained tone. Moreover the organ point must enter and emerge according to true chord progressions.

In modern compositions we occasionally find other organ-points than tonic or dominant; and frequently the stationary tone is an upper part. Sometimes both tonic and dominant are used as a double organ-point, and even triple organ-points (with added ninth) have, not very successfully, been attempted.

Note. See the paragraph on the Harmonic Chord of Nature, in section 35, for a hint as to the reasonableness of double or triple organ-points.

53. All of the uses of inharmonic tones already discussed, like the uses of simple chords, become, after they are once familiar to the musician, subject to the law of variety. Thus, as we find both regular (so called) and irregular resolutions of chords, we also meet regular and irregular uses of inharmonic tones.

a. One, two or three notes of a chord may be retained as inharmonic tones in the next chord, coming later into place, even although they do not resolve as suspensions but skip to their places in the new chord. Or we may find one or more notes of a new chord appearing while yet the remaining parts sound intervals of the old chord.

Such movements are called **Delayed** or **Anticipated Progressions.** Since in either case the disturbance is a rhythmic one the general laws of progression from chord to chord are *in no way affected* by this irregularity.

b. As with the seventh in seventh chords, the resolution of a suspension may be delayed, by the interpolation of other chords in which the tone also appears as a suspension. Rarely an interpolated chord may contain the suspension tone as a chord note, especially in a movement into a new key. But always the suspension must ultimately follow its tendency.

The resolution of a suspension may also occur as its chord changes, the resolution tone thus appearing first with the new chord.

c. A skip to some harmonized note and return is frequently inserted before or after the appearance of a passing, alternating or suspension tone. If the skip enters first the inharmonic tone might simply be regarded as an appoggiatura, were not its connection with the note before the skip so apparent. If the skip comes after the inharmonic tone, the return may be either to the inharmonic tone, which would then follow its tendency, or it may be to the resolution tone itself. Somewhat rarely the skip may be *to an inharmonic tone* which being thus suggested would also need resolution either before, with or after the original inharmonic tone. Instead of a skip after a suspension, the note to which skip might be made can also be reached through a melodic passage and return alone be by skip ; or the skip can occur and return from it be by melodic passage. A melodic passage both ways is a rare interpolation.

d. Perhaps the boldest license in the use of inharmonic tones is the device of leaving them in mid air, as it were, without resolution. This can only be permitted when they are so unmistakable in their tendency that the ear at once recognizes the true resolution and supplies it unconsciously, and when at the same time the continuance both of the harmony and of the melody using this license *in no way hinders the mind from supplying the resolution.* A successful use of this device is very delightful.

54. Careful study of this chapter will have emphasized the fact that progress toward freedom of melody and harmony is by well defined steps and is in no true sense by a breaking of laws; rather it is by an acknowledgment of still further laws, the observance of which calls for a new and beautiful resultant that satisfies all laws.

What cannot be formulated is a rule of judgment by which students may know when to use and when to forbear use of the freer, more elaborate effects in harmony. This much is true of all speech in art, by the mode of poetry or of music, that that which is simple and natural must always predominate; ornamentation of whatever sort will cloy, save as it takes second place to a really noble structure. Here lies the material; use of it tests the artist.

GENERAL NOTE.—The exercises of chapter I, II, III, and afterwards of V, may be utilized in the study of this chapter; simple harmonies there indicated being adorned and modified in illustration of the various uses of inharmonic tones. The basses of these exercises should, after being written, be figured accurately.

CHAPTER V.

ON MODULATION.

55. In discussion of the material of harmony, compositions have thus far been assumed to be written throughout on the basis of one scale. Hints only have been given, vide sections 43, 44 and 45, of possible wider range. The literature of music, however, presents an exceedingly small minority of compositions which confine themselves to one key, even including all its chromatic tones. Usually excursions more or less extended into other keys are made, with a final return to the original scale. These transitions to new scale tones and relationships are ordinarily made so naturally, by the following out of melodic laws, that the mind accepts the new key without protest, reserving only such allegiance to the old that the final return to it is especially acceptable. Such smooth transition from the basis of one key to that of another is called a **Modulation.**

In the study of modulation three steps should be mastered:

1st. Recognition of chord material and its significance in modulation.

2d. The process of modulation.

3d. The artistic use of modulation.

56. When we observe the chords of the major and minor scales (cf. sections 21 and 32) with reference to their use in modulation, it is seen that

a.

A given major triad can stand, as a scale chord, in any one of 5 keys : (I, IV, V, | V, VI.)
A given minor triad can stand, as a scale chord, in any one of 5 keys : (ii, iii, vi, | i, iv.)
A given diminished triad can stand, as a scale chord, in any one of 3 keys : (vii°, | ii°, vii°.)
A given major triad with major 7th, in any one of 3 keys : ($\text{I}^{7'}$, $\text{IV}^{7'}$, | $\text{VI}^{7'}$.)
A given minor triad with minor 7th, in any one of 4 keys : (ii^7, iii^7, vi^7, | iv^7.)

Such chords serve well, in a transition of key, to prevent abruptness of entrance into the new key, but are not especially valuable to define the key.

b.

A given augmented triad can stand as a scale chord in but one key, (III + .)
A given minor triad with major 7th, in but one key, ($\text{i}^{7'}$, rarely used.)
A given diminished triad with diminished 7th, in but one key, ($\text{vii}^{\circ 7 \circ}$.)
A given augmented triad with major 7th, in but one key, ($\text{III}+^{7'}$, rarely used as a scale chord.)
A given major triad with minor 7th, in but two keys, (V_7, V_7.)
A given diminished triad with minor 7th, in but two keys, ($\text{ii}^\circ{}_7$, $\text{vii}^\circ{}_7$.)

The two latter chords serve perfectly to define a key, since their resolution chord is determined by the key in which they appear. The dominant ninth chord, and the altered chords named in section 45 (6^+, $\begin{smallmatrix}6^+\\5\end{smallmatrix}$, $\begin{smallmatrix}6^+\\4\\3\end{smallmatrix}$, N 6) are also decisive. But, of the chords standing in but one key alone, those two which are used with any frequency have such value as chromatic chords that they cannot be relied upon to determine a scale, (cf., however, sec. 59, **a.** and **b.**)

c. There is one use of a major or minor triad that may be nearly as conclusive test of a key as the chords given above. A $\begin{smallmatrix}6\\4\end{smallmatrix}$ chord on the accent always strongly suggests the cadence (vide sec. 40, last par.). If then a major or minor triad appears in this inversion on accent it will naturally seem like a tonic chord, and if the cadence then follows the key is established.

57. While the analysis of chords presented in section 56 would be enough in most cases to determine into what key a modulation is made, yet the appearance of chords answering to such structure and resolution is by no means sufficient evidence of modulation. Not simply chords that might stand in a new key, but the *impression* of the new key must be obtained.

This distinction is important in view of the ever increasing use of chromatic chords in a key. These chromatic chords may be identical in form with scale chords of another key yet not suggestive of the new key, serving only to bring with greater inevitableness the chord of the old key which follows.

Note.—For example, the tonic chord in key of C might add minor 7th, and be brought more naturally to the chord of F, without at all implying the key of F; or it might augment its 5th without suggesting the key of *a* minor; or it might do both and thus be drawn in most inevitable manner to the chord of F, without at all interrupting the impression of the key of C.

There are a few chords, made largely of tendency notes (and usually chromatic), that so perfectly introduce a succeeding consonant triad as to deserve the name of **attendant chords** to the (primary) triad. Such are all the chords which contain what would be leading-tone triad if the primary triad were tonic ; i. e., chords which would be marked vii°, V^{7}, $\text{vii}^{\circ 7}$ or $\text{vii}^{\circ 7 \circ}$, or V^{9}, were their resolution I or I. Other attendant chords of a major triad are the augmented triad ($\text{V}^{\sharp}$ to I) with or without the minor 7th; and the Italian and French Sixths that resolve to it.

The Neapolitan Sixth is also an attendant chord to a minor triad. These attendant chords furnish an open door to a modulation. Used according to the laws of melody in chromatic chords (vide sections 42, 44 and 45) they give smooth entrance to a new key if it is desired, or assent quite as readily to a continuance of the old key.

58. The process of modulation consists a) in introducing a chord of the new key by good melodic progression from a chord of the old key and b) in continuing with chords of the new key in such a way as to establish the impression of the key.

a. To introduce the new key

1) The most satisfactory method is by use of some one of the attendant chords to the *new tonic* or *dominant.* This

introduction to the new key can always be good if the root of the new tonic or dominant be a note of the old scale. Indeed few keys have so little in common that no one of the attendant chords of the new tonic or dominant could be made to succeed naturally some chord of the old key.

Yet the act of modulating immediately to what are called remote keys by attendant chords is difficult through the limitation of means; hence other modes of introduction are often taken.

2) A remote key is often reached by a series of attendant and primary chords though nearly related keys, none of the intermediate keys being definitely established, the chords of it serving merely to destroy the impression of the original key and to assist the melodic progression of parts toward the entrance chord of the new key. Much variety may be had in such a modulation by use of the different attendant chords.

NOTE.—An illustration of this process is the well known chain-modulation through all major keys by adding to each tonic chord, as reached, a minor 7th, thus making it a V_7 attendant of the relative tonic below (vide sec. 15).

3) The new key is often reached directly through a $^6_4$ chord of the tonic on the accent, vide sec. 56 **c**. This modulation is always best made when all the parts that have motion come to the $^6_4$ chord by scale progression. The succeeding chords will naturally be the cadence chords of the new key.

4) The new key is occasionally reached through attendant chords of some other chord than tonic or dominant, or sometimes directly through some other chord than tonic.

In all of these methods of introduction to the new key too much stress cannot be laid upon the necessity of good melodic progression in all the parts. It is by such melodic device that the mind can be lured into acceptance of the new key relationships.

5) Thus, by virtue of its melodic strength, a strict sequence, vide sec. 39, can enter even remote keys; what would else be an intolerable thrusting of the new key upon

the ear becoming entirely justifiable because of the melodies involved. A free sequence, and what is called ' imitation,' often serve the same purpose.

NOTE.—Certain writers, who emphasize the distinction between a modulation and a transition of key, class several of the entrances to new keys indicated above, (e. g., 3) 5) and some of those in 4)) as transitions. But the essential difference between a modulation and a transition is that the former merges old and new key by continuous melodies, while the latter makes disjunction of melody with the change of key. Instances of disjunction are found constantly in hymn tunes, where one line closes with a cadence in a certain key, the next line starts fresh melodies in a new key.

There is a peculiar melodic fault liable to occur in the process of modulation, called the **unharmonic cross relation.** This obtains when a note having been quitted in one harmony by a certain voice, the *chromatic alteration* of that note or its octave is taken by another voice in the next or even the second chord. The voice that first sang the note should sing its alteration. Objection to this effect is not felt, however, when the voice quits the note in one direction and the chromatic alteration is a tendency note in the other direction. Several other exceptions to the faultiness of cross relationship might also be stated. But the places where it is a fault appeal to the ear so instantly that there is need only to call attention to the nature of the infelicity, which being recognized can readily be corrected.

b. For the purpose of establishing the impression of the new key

1) No method is so perfect as by use of the cadence. Any of the cadences may be chosen, though a cadence to the tonic would be most definite.

2) It is also quite possible to define the key without a cadence, by lingering upon the dominant chord, especially with its 7th (vide sec. 43, **a.** and Remark) and upon chords connected naturally with the dominant.

Both of these modes of procedure depend for their value upon a right use of accents. As to accent in the cadence see section 40. For the general law of rhythm in a key see section 63. **a.**

3) In accordance with the general law of accent it is possible to effect a modulation between related keys with-

out once striking the divergent note of the two keys, by shifting the accents from the principal chords of one key to the principal chords of the other.

4) When a modulation is made through attendant chords the law of accent will often serve to help the impression of the new key. Because chromatic attendant chords to triads in the original key come ordinarily, though by no means always, in subordinate parts of the measure with the effect of passing chords, while accented chromatic chords serve, as do suspensions and appoggiaturas, the more fully to emphasize the chord to which they go; the chord thus strongly pointed out may easily seem to be tonic in a new key, and can be treated as such.

5) A lingering upon the introductory chord by use of suspensions or appoggiaturas will in like manner often help the desired impression.

59. The preceding sections have taken up what might be called the anatomy of modulation. The living thing, a true modulation, is approached from another standpoint; the question being always, how shall this change of key be made so simple and inevitable that the mind reposes gratefully upon the new relationships while taking at the same time delight in the variety of effect which is presented. Here, as always, it is melody that furnishes the touchstone.

The student must have already seen that all chords have their natural movements: some (e. g., consonant triads) have several. The subtle shift in modulation is made when a chord is approached as standing in one relation and left as standing in another; the movement to it being natural, the movement from it being natural also, but under another conception of the chord.

When the chord where the shift is made is a scale chord of both keys, and with the same notation (e. g., the modulations indicated in sec. 58, b. 3) and some of those in a. 1) 3)4)), no very decided change will be felt. The modulation is gradual and sometimes almost imperceptibly accomplished.

When the chord is a chromatic chord of either or of both keys the modulation will be more pronounced, but by no means unsatisfactory, unless either the movement to the chord or from it is unnatural.

There are two very distinct classes of modulations.

The first class: *where the chord tones, whatever the key relationship of the chord, follow out the tendencies first indicated.*

Other modulations stand to modulations of this class as natural chord movements in general do to irregular chord movements (vide sec. 42, par. one, Note), and as harmonic material does to inharmonic (vide sec. 54).

The second class: *where chord tones, taken as having a certain tendency, are left as having another.* Since tendency is always indicated in the notation, shift of tendency involves change of notation. This enharmonic (vide sec. 11) writing of tendency notes has given to this class the name of **Enharmonic Modulations.** Enharmonic modulation furnishes many of the most striking and beautiful changes of key that can be made. Yet conservative musicians insist that these modulations like all other embellishments are masterful almost in direct proportion to the rarity of their use. By way of contrast to ordinary structure they are strong, used constantly they are effeminate.

Several chords are peculiarly adapted to such enharmonic shift of tendency.

Notably

a) the diminished seventh chord is interchangeable with itself;

b) the augmented triad, with itself;

c) the dominant seventh chord, with the German or Italian sixth; and

d) the major triad, with the Neapolitan sixth.

a. The diminished seventh chord is found as a scale chord upon the leading-tone of the minor scale (VII$^{\circ 7 \circ}$) and resolves to the minor tonic (I). The tendencies of its notes are, however, quite as well satisfied by resolution to a major triad. This is seen when the chord appears on the leading-tone of the major scale (the seventh being chromatically lowered), and resolves to the major tonic. Also a chromatic attendant chord of the diminished seventh may be constructed upon the diatonic half-step below any major or minor triad of a scale, and the natural tendencies of the notes will bring about correct resolution into the triad.

The tones of this chord divide an octave into equal intervals of a step and a half. But each of these four sounds when taken as root of the chord requires a different notation of the chord and therefore a different resolution for it. If therefore any diminished seventh chord be introduced in a modulation there might be three writings of it enharmonic to the one chosen, having each different tendencies, thus affording a possible entrance into four different major, or four different minor triads. Since these triads might be taken either as tonics, dominants, or even as other chords of a new key it will at once be seen what a wide range of modulation is opened in the use of one diminished seventh chord. There are three different series of tones making diminished seventh chords (since a fourth series, starting each series successively a half-step above the last, would but duplicate the tones of the first) ; and in as much as from any chord easy melodic movement to any of the three series is possible, the whole twenty-four keys lie instantly at hand through this chord.

But the very freedom of choice which the sounding of this chord gives, shows also a reason why the chord is not in itself sufficient to produce a decided modulation : except to the eye, the desired key is unknown until the resolution chord appears. For this reason the seventh of the chord is often resolved in advance, thus changing it to the

V^7 attendant of the resolution chord, which is by this means doubly introduced.

The resolutions of the diminished seventh chord discussed so far have been regular. But in as much as no tone of the chord can lie more than a whole step away from some note of *any chord*, and the tendencies of the diminished seventh chord are so indeterminate, the chord is particularly open to irregular resolutions, obeying in such case simply the ordinary rules of melody. An instance of this is seen when diminished seventh chords follow one another in chromatic ascending or descending passage, the last one alone receiving a regular resolution. A very common resolution is to the major triad whose root was seventh in the diminished seventh chord.

b. The augmented triad is another chord that divides the octave into equal intervals, having intervals of two whole steps each. It is therefore also subject to enharmonic writing, each tone as root requiring a different notation and resolution. The natural resolution of this chord is to a major triad at the fourth above, as III^+ to VI in the minor scale. The chord is more frequently used as a chromatic alteration of a chord in a major scale and, especially with the seventh added, forms an interesting chromatic attendant chord to a new tonic or dominant. It is only as a triad, however, that its enharmonic use occurs. Only the root of the chord permits doubling, vide sec. 29. The sound that is doubled, therefore, gives a definiteness to the tendency of the chord which is lacking with the diminished seventh chord.

The veins of this chord have not been so deeply worked as of the diminished seventh, either in its natural resolution, or its irregular connection with chords standing in good melodic relationship to it. A chromatic ascending or descending series of these chords has a far more breezy effect than of the diminished seventh chords, and for certain æsthetic purposes is equally legitimate.

c. The dominant seventh chord is enharmonically identical with the German Sixth ($\substack{6\\5}^{+}$), and is therefore of use in enharmonic modulation. A chord entered as dominant seventh in fundamental position may be made to resolve as a German Sixth to the major triad at the diatonic half-step below (subject to the limitations in use of a $\substack{6\\5}^{+}$ chord, vide sec. 45. b), or to the minor or major triad at the major third above, as a $\substack{6\\4}$ chord in cadence.

The reverse process is rarely used, for two reasons: The $\substack{6\\5}^{+}$ is not so readily reached as the dominant seventh, since in any case it is a chromatic chord, and also chromatic notes do not so readily give up their tendencies.

The Italian sixth can also supplant a dominant seventh with fifth omitted and third doubled. Such doubling of the third would itself assist the mind to accept the transition of thought about the chord, since it is faulty in a dominant seventh chord but necessary in a 6^{+}.

d. The first inversion of a major triad can also be used as a Neapolitan sixth chord (vide sec. 45. d) resolving as a minor $\substack{6\\4}$ cadence chord to a tonic at the diatonic half-step below.

In all these cases of enharmonic modulation it is not customary to actually notate the enharmonic intervals twice, but sometimes one, sometimes the other writing will be used, the adjoining chords being assumed to indicate what the missing notation should be. If, however, the chord itself is struck twice usually the shift of notation will be made.

Enharmonic modulation, besides including all such interchangeable chords as the above, is made when a note of union between the preceding and the modulatory chord needs to be written enharmonically, e. g., sec. 60. **d.** 2) *f*.

ON THE FREE MOVEMENTS OF HARMONIES.

60. There are certain irregularities in chord connection the statement of which has been deferred from chapter III, both because some of them occur oftenest in modulation and because they are most easily understood as the outgrowth of the movement toward freedom which has been illustrated increasingly throughout our study.

If the preceding sections of this text have been mastered the student needs but an exposition of the free use of harmonies to have a key to the analysis of all harmonic effects in the literature of music. It will be well to regard these free movements as the further application of inclinations already observed.

a. The first indication of freedom met with in the text was the readjustment of a chord on its repetition (vide sec. 23, exc. 2). This liberty, at first applied to one or two notes of the chord, then to the whole chord, would likewise at first extend only to motion to the nearest intervals; then wider skips might be taken, the only limit prescribed being the recognition by the mind of the melodic movements. Contrary motion in such skips is especially melodious, as elsewhere; and when similar motion is used a return in succeeding chords in the direction of the original utterance will seem very satisfactory.

One outcome of this freedom is that effects in the different octaves are felt to be substantially the same, so that a chord uttered in one octave may be followed by its successor in another octave, *unless the chord contains a tendency note,* which requires resolution where it appears. Use of this latter liberty may be allied to abbreviated resolutions (vide par. **c.**), repetition of the chord in the new octave being thought of as omitted.

b. The next indication of freedom was the abandonment of a note of union and use of contrary motion in connection of triads, in order to avoid the augmented intervals, vide sec. 25. That which was there a device to avoid an evident fault is also constantly met as a purely melodic use of contrary motion. It is often of avail likewise, to avoid the minor fault of a concealed octave. As with freedom in repetition, the skip of the chord may be greater than to the nearest notes in contrary motion, the law of melody recognition alone setting limit to such skip.

c. The next indication of freedom came in the abbreviation of progressions; a seventh chord, for example, resolving directly to another seventh chord, without first an appearance of the triad, vide sec. 37. Extension of this liberty must, of course, rest upon the assumed ability of the mind to carry out the omitted steps. This is a law common to all modes of thought, in music or mathematics or metaphysics.

Composers have used this device freely with suspensions and appoggiaturas, as well as with real chords, producing most delightful results; e. g., a dominant seventh chord with fifth suspended resolving directly to the tonic chord, the suspension either remaining as third of the tonic chord or skipping to root, but the suspended note itself being left out.

Note.—Certain theorists have endeavored to account for these effects by the assumption of elaborate chord formations with most of their notes omitted, the chord above cited, e. g., being called the Dominant Thirteenth, with fifth and ninth and eleventh omitted. The law of ellipsis is better.

Section 53. d. is an illustration of this freedom.

In modulation to a new key this elision is rarer because gaps in thought here are not so readily supplied. But well-known modulations might be subjected to abbreviation.

d. The next indication of freedom came in the irregular resolution of seventh chords, vide sec. 43. d. Here the overruling consideration is more than ever a melodic one; such irregularity is good only when it subserves melodic ends.

It is under this head that many of the irregular chord movements in modulation are to be placed. A more detailed, though by no means exhaustive, presentation of some of them will therefore be in order here.

1) The resolution of a seventh chord to a triad requires simply good melodic motion, especially correct movement of the tendency notes.

We find then, with the limitation just stated, that

a) a dominant seventh chord may resolve *1*) to the minor or major triad on the major second above, *2*) to the major triad on the minor second above, *3*) to the minor triad on the minor third below, *4*) to the major triad on the major third below, *5*) to the major triad on the augmented fourth or diminished fifth above, *6*) to the major or minor triad on the major second below, &c.

b) other seventh chords can have like resolutions, that to the triad on the major or minor second above being perhaps the most frequently met.

2) Resolution of one seventh chord into another may always be made if all the voices which move proceed by melodic scale progression, especially if in the change all tendency notes have their correct resolutions.

a) an alteration of the character of a seventh chord upon the same root needs no explanation.

b) a dominant seventh chord can be changed to a diminished seventh chord by chromatic raising of the root.

c) a dominant seventh chord can be resolved to another dominant seventh chord by chromatic raising of the root and diatonic lowering of the seventh a half step.

d) a dominant seventh chord can be resolved to another dominant seventh chord by chromatic lowering of the third, and diatonic lowering of the fifth a whole step and of the seventh a half step.

e) a dominant seventh chord can be resolved to another dominant seventh chord by chromatic lowering of its third and fifth, and diatonic lowering of its seventh a whole step.

f) a dominant seventh chord can be resolved to another dominant seventh chord by the chromatic raising of its root, diatonic lowering of its fifth a half step, and enharmonic writing of its seventh (the tendency being shifted). Another notation of this whole chord, likewise involving enharmonic writing, is possible.

g) a dominant seventh chord is sometimes resolved to another dominant seventh chord by diatonic raising of its root a whole step, of its third a half step, and chromatic raising of its seventh a half step. This last change is open to the objection that the seventh does not obey its tendency, while it is doubtful whether there is any enharmonic shift that may account for it.

h) resolutions from dominant seventh chords to other seventh chords, or from one subordinate seventh chord to another are readily made after the same method.

3) Further extension of this freedom will allow *any melodic succession of chords, where the tendencies of the tones are obeyed.*

e. The last indication of freedom came in the untrammeled use of organ point chords, vide sec. 52. Modern music inclines more and more to the introduction of stationary tones with two, three or four chords, as well as for longer successions. Many combinations of tone that would need elaborate explanation on any other basis, find instant and natural reason when seen to be through momentary adoption of a stationary tone.

EXERCISES.

I. Harmonize a number of figured basses introducing modulations (e. g. from Emery's Supplementary Exercises pp. 17–23) and determine the keys of the chords, according to section 56.

II. Rewrite exercises 5 and 7, page 19, introducing between each chord, as unaccented quarter note chords, a suitable attendant to every following accented chord.

III. In these exercises just written observe all the keys to which the attendant chords used would give entrance. Make modulation to each key, utilizing the exercise as already written up to the point of the introductory chord to the new key, then confirm the new key by suitable cadence therein.

IV. 1. Write the diminished seventh chord containing the sound middle c, in the four notations of the chord, and complete the modulation to each of the eight keys of which it could be vii$^{\circ 7 \circ}$.

From the same chord make an irregular resolution to all other keys that afford melodious entrance.

2. Treat the augmented triad containing f (♯e) in similar manner.

3. Modulate by enharmonic shift through the dominant seventh chord of the key of C to the key of B ; to the key of ♯F. Modulate from the key of C through the German Sixth resolving to the dominant of ♭A.

4. Modulate from F to *a* minor by the Neapolitan Sixth. Use the triad of E as an N 6 and modulate (write in two notations.)

V. Choose a major triad. Write its natural progressions in the different keys of which it might form a scale chord : of which it might form a chromatic chord.

Treat in like manner a minor triad ; a diminished triad ; each of the various seventh chord formations.

VI. From the dominant seventh chord with root c, progress to all the chords indicated under section 60, d. and establish each new key by a cadence.

VII. From the key of — make modulation in all possible melodious ways to the key of —, establishing the new keys by the different methods indicated.

NOTE.—This last exercise to be exhaustive would extend to modulation from every key to every other key in every possible way. It is at least advisable to modulate thus from one given key to every other. In addition to written exercises the student is earnestly advised to modulate exhaustively at the key board, always *justifying the appearance and progression of each note struck.* However few or many modulations are made *each one should be mastered.*

In all the modulations suggested the student is urged to make use of the embellishments of rhythm, inharmonic tones, and variously extended cadences.

CHAPTER VI.

ON THE HARMONIZATION OF MELODIES.

61. The study of Harmony in its narrower sense ends when all the material of chords and the laws governing the connection of chord with chord have been presented. It is the province of Composition, which includes Form, Counterpoint and Tonality, to decide where certain chords are best used : e. g., what chords are suitable upon accent, what admit of best effect in adornment, where and whither modulations may occur, where cadences should be made.

It is, however, customary at the close of a manual of harmony to prepare the student for the study of composition, trenching somewhat upon its material, by discussion of the rules for harmonizing a melody.

Melodies admit of accompaniment in three ways.

1. By combination with one, two, three or more subordinate melodies in chords.
2. By addition of one freely moving melody that supplies successively all the notes of the chords used, or sufficient to indicate the harmonies.
3. By addition of a bass, and intermittent groups of chords or of free moving melodies, according to certain laws of rhythm.

62. In harmonizing any note of a melody, whatever be the form of its accompaniment, first of all its own place in the harmony must be determined. Analysis of possibilities is therefore desirable.

A note may be root, third, fifth, seventh, or ninth of a scale chord, a tendency note of a chromatic chord, or an inharmonic tone. Since a tone in most of these possible relationships requires either a certain resolution, or preparation, or both, choice of the chord will depend sometimes upon the previous melody note, sometimes upon the following note, sometimes upon both, sometimes upon its rhythmic position.

NOTE.—The student is advised to take some one note, as *d*, and exhaust its possibilities, writing with it its chord and the other melody notes necessary to each harmonization chosen.

63. The chord to be used with a melody note is determined in part by the laws of rhythm. A brief statement of rhythm must therefore be made here.

Comprehensively stated, **rhythm** is the division of progress into regular successive time periods by the recurrence of identical or similar processes.

This definition will include all rhythms, e. g., of the waves of the sea, the beating of the heart, succession of seasons, as well as the rhythmic motions of poetry and music. But the general characteristics of rhythm are the same everywhere. The rhythms of nature and of life are wonderfully intricate and varied, but furnish that evidence of unity in design which gives meaning to existence, and is sole basis of the joy and pain of anticipation. It is the presence in music of rhythm, manifested in various ways, that gives to it a unity of beauty. Rhythm in music is the beating of its heart.

There are several distinct rhythmic divisions in music. The smallest time period (of either two or three time-units) is practically constant throughout a composition or portion thereof. Notation takes cognizance of this smallest period, or of a next larger division made by regular groupings of this period in twos or threes, by use of the *bar* articulating the *measures*.

The fact of this smallest rhythm is established by some method of giving special value to the beginning of each group ; namely, by stress upon the entrance notes (accent), by important entrance chord, often by extra length of entrance notes.

NOTE.—Since the bar is uniformly drawn before the emphatic recurrence in the rhythmic group it is assumed here that the beginning and end of a measure are beginning and end of a group.

For unusual structures of the measure and all other irregularities in rhythm mentioned in this chapter the student is referred to works on Notation or on Form.

Obedience to this measure rhythm requires therefore, in the harmonization of a melody note, that

a. The accented parts of the measure, which are the strong rhythmic parts, should be occupied by important chords. Such are the principal chords of a key (vide sec's 22 and 36), with which may be classed two chords when used in the cadence progression, namely, the *submediant triad* following the dominant, and the *supertonic chord* preceding the dominant. These chords are of special value in establishing the impression of a key (cf., sec's 58, b, 3 and 64), emphasis of other chords than these usually serving to throw doubt upon the key relationship of the chords used.

This law of rhythm is the more important in view of the frequency of modulations in modern music.

When however a subordinate chord on the accent is used as a real-chord suspension of a principal chord (vide sec. 49, b, Note), the objection to its use is not felt. $\overset{6}{\text{III}}$ resolving to $\overset{7}{\text{V}}$ is such case. The rhythmic value of such a real-chord suspension has its most common example in the $^{6}_{4}$ consonant triad upon accent, which is always felt to be the suspension of a major chord upon the same bass tone, and hence is regarded as a tonic $^{6}_{4}$ used in extension of the cadence (cf., sec. 56, c).

b. The longest notes should come upon the accented part of the measure. Hence the embellishments that divide the accented beats necessitate also division of the unaccented beats of the measure. Deviation from this rule is a rhythmic irregularity, (analogous to irregular uses of chords), which is most affective when rightly treated.

c. A chord should not be struck upon an unaccented (weak) part of measure and be held over the accent. *Repetition of the chord upon the accent does not obviate the difficulty.*

Violation of this rule produces that form of rhythmic irregularity called **syncopation.** It may be either a Retardation or an Anticipation (but of the whole chord, sec. 53, a). This irregularity is of great beauty when skilfully used ; otherwise it introduces confusion into the rhythm and is therefore unpleasant.

When, however, all the notes of the chord are tendency notes (a suspension chord) the effect is good, for the confusion does not exist.

An analogous confusion is felt sometimes with change of chord when *the same bass note* is held from the weak part of the measure into the strong. If however the note receives added harmonic value at the entrance of the accent it may remain. Such added value is given when the note is made a tendency note, and in a number of special ways : e. g. by appearing in certain inverted chords, the root of certain suspensions, &c.

64. Underlying the laws of chord connection and of rhythm are the laws of chord affinity. These laws are a guide in the structure of a free melody, so that its harmonization is often times at once apparent to a master of the underlying relationships of chords.

The affinities of chords are based upon the interplay of scale with scale. Every major scale contains six consonant triads. Each one of those triads standing by itself would assert itself as a tonic chord ; and though combined with the other chords, if favorably placed, upon accent, with suggestion of a cadence (vide sec. 63, a, last par.), it would still so assert itself. Of these keys which might be thus presented, two of the minor scales have *three* triads each, in common with the original scale, and the two major scales have *four* triads each, in common with the original scale. It has already been seen that the laws of rhythm furnish a necessary means of preventing ambiguity of key in the presence of so much common material. But the laws of rhythm are not in themselves sufficient. since the most closely related keys have two principal chords as principal chords of the original key also. Something more is requisite to enable one to understand what choice of chords is valuable for retaining the impression of a key while granting the widest possible range of effect. This something more is a knowledge of the complemental classes of chords.

The following view of the major scale triads will help illustrate.

Dominant Side.
ii IV, vi I, iii V, vii°.
Subdominant Side.

The consonant triads of a key are here grouped in three pairs, each of which consists of a major triad and its relative minor triad ; one group asserting for the Subdominant related keys, one for the Dominant related keys, and one for the Tonic related keys. The dissonant triad of the scale is the only unmistakeable chord, containing notes that forbid it to belong to any key save to the tonic major or its relative minor. Its root is a tendency note, and its fifth is also a somewhat mild tendency note ; and altogether it inclines so inevitably to the tonic chord as to justify the name of Leading-tone given to its root and to the chord itself.

If music were restricted to use of the vi I and vii° with rhythmic preponderance on I there could be no doubt of key. With the introduction of other triads, a preservation of true key balance will require 1) largest proportion of Tonic class chords and of the vii°, and 2) fairly impartial use of Subdominant and Dominant classes.

When we add sevenths to these triads two interesting facts appear ; that the dominant chord is made unmistakeable in its key and tendency through the incorporation into it of the leading-tone triad ; and that the natural resolution of all seventh chords is a direct aid to tonality, since it is always to a triad of another class.

NOTE.—The same unmistakeable character is given to V^9 and to all chords containing the leading-tone triad. But the III, though a Dominant class chord, does not partake of this added affiliation to the Tonic class, and is for this reason somewhat colorless, and consequently less used. The superior definiteness and value of the Authentic over the Plagal cadence is due to the affiliation above shown.

From this intimate connection of the leading-tone triad with dominant chords it is reckoned as belonging to the Dominant class.

The triads of the minor scale classify in the same way, the two additional dissonant triads by their natural progressions only confirming the tonality. That there is less freedom of movement in the minor key is due to its melodic peculiarity.

Rules as to the complemental usage of chords may be given as follows :

a. Tonic class chords are the key centre.

b. Other class chords progress naturally to the tonic class.

c. Chords of the same class usually do not well follow one another, being monotonous and tending to destroy tonal balance. Especially is this true of a progression from a subordinate to its principal triad.

-dominant d. The sub~~ordinate~~ class chords readily move to the dominant class, but not the reverse, since the tendency of the dominant group is so strong toward the tonic. But see note above.

e. Tonic class chords progress to either class.

The foregoing presentation of the chords of a key needs only to be supplemented by consideration of altered chords and chords using inharmonic tones. These of course are tendency chords to triads in the key, else modulation is made. They always make emphatic their resolution triads.

The law of complemental relations therefore must be insisted upon all the more strongly in the movements of the scale chords when such adornments are desired.

65. A few additional melodic hints may here be given. Since the melodic affinities of chords have been shown throughout our study in the case of dissonant chords, what is said will apply mainly to connection of consonant triads.

a. As to choice of chords :—

1. Any succession of triads is good which can be connected diatonically in all the voices, without parallel fifths or octaves or the augmented second. Beside the connection of leading-tone triad with tonic triad, this can occur only by inversion of one or both chords.

NOTE.—It may be well to state here that parallel fifths and octaves and the augmented second, which are most strenuously objected to in continuous four part writing, have their own æsthetic value and may add to the beauty of a composition when rightly used. Consideration of such special usage belongs however to advanced study of composition.

2. Of the triads requiring skip in some voice or voices, those connect best which have their roots a perfect fifth (or fourth) apart. Triads thus related have but one note of union. When the bass moves from root to root, often it is preferable to abandon the note of union and use contrary motion in the upper parts, vide sec. 60, b.

3. Triads with roots a third apart have two notes of union. Connection of such triads is best when the new note is root and emphatic, as by a descending series of thirds from root to root. But compare c. in the preceding section.

4. Triads with roots a second apart are readily connected by progression from lower to upper root ; not so melodiously from upper to lower.

b. When, in accordance with the preceding and present sections, the harmonies have been chosen that can accompany a given melody, the laws of progression in the accompaniment are as follows :—

1. If the accompaniment forms continuous chords, the voice parts will be restricted in movement (vide sec. 42), wide skips in alto or tenor being rarely good. When, however, special melodic importance is assigned to an accompaniment part its freedom of movement at once becomes greater.

2. If the melody is accompanied by one free moving voice the laws of chord connection must be observed in the passage of the voice from a note of one chord to the note of the next, while great liberty of skip from one note to another of the same chord is given.

3. If the melody is accompanied by a bass and intermittent groups of chords, the bass will observe the rule of paragraph 2; and, in the treatment of the chords, each group will be held to the laws of restricted melody, while the movement from group to group may have wide skips.

66. In the harmonization of a melody it is important to know when and whither to modulate. The increasing use of modulation in music is but the natural outgrowth of the demand for freedom, of which we have seen already many illustrations in use of melody and harmony.

The logic of modulation is in the application, with wider scope, of the law of complemental relationship. Starting with the tonic note as centre we can use, closest to it, the Tonic class chords and the leading-tone triad; next the Dominant and Subdominant classes of chords; next the tendency and attendant chords to the Tonic group, to the Dominant and Subdominant groups; next the *keys* of the dominant or subdominant, of the subordinate triads, of the tonic minor, the dominant and subdominant minor, etc.; finally the whole wide circle of keys which may be reached by good melodic progression. Whatever circle of progress outward from the tonic be reached, the law of complemental relations requires such use of chords, of keys, of groups of keys, as shall preserve a true unifying harmonic centre, about which all movement shall play, to which all expression shall own allegiance. This is necessary alike to the perfection of the simplest hymn tune or of the grandest symphony.

NOTE.—A significant indication of this underlying principle is the prevalent use of organ point effects with even most remote harmonies, the tonal centre as it were asserting itself throughout and compelling final submission.

This thought is at the core of structural harmony, but cannot be elaborated here. Application of it to the question of modulation, or of transition, in harmonizing a melody is as follows :

a. Power to modulate rests in each case upon the possibility of using correct rhythm and definite key chords of the desired scale. Progress into and out of a key will follow the rules of Chapter V.

b. Determination of when to use a new key rests first upon the ability to do so, and second upon the need or value of widening the harmonic circle.

Many sections of melody show in themselves not only possibility of modulation, but into what key it is to be made. A chromatic note, however, is not an unfailing indication that modulation is desired ; and a passage using only scale notes of the original key may yet, from its rhythm, plainly require a new key.

After a phrase completed by a cadence it is very common to find immediate transition to a new key, the melody by its rhythm or notes showing whither it has gone.

c. When a melodic passage is capable of harmonization in one of several keys, reference must be had to the law of complemental relations, and also, if for example the passage appears in a melody several times, to the law of variety or of emphatic reassertion (discussions of which points belong to the study of larger rhythms).

The preservation of tonal balance makes it especially satisfactory if entrance be effected into keys on both the upper and under side of the original key (see table in sec. 15) ; or, where the modulations are wholly or mainly upon one side of the key, when it finally returns, a preponderance of scale chords from the class upon the other side of the key is acceptable, till balance be restored. An extended modulation should not come so near to the end of a composition as not to allow sufficient time for restoration of the tonal balance. Such a modulation could be carried closer to the end if it were upon the subdominant side, since the dominant discords or a passing modulation into the dominant key will more quickly reassert tonality.

67. In order to harmonize a melody rightly one needs to understand when the cadences should appear. A full treatment of this subject comes under the head of Form. A few hints may here be given.

The regular rhythmic group next larger than that of the measure is made by combining measures, usually by twos or fours, articulated by the cadence, vide sec. 40. The cadence marks a more or less complete halt in melody and harmony ; it is the mode par excellence of granting rest from the resistless onward flow of sound, and presents a far more strenuous rhythm than that of the measure. But the full statement of a melodic thought is seldom compassed in one of these cadence groups. Usually four such groups of measures, sometimes eight, are required to express a single musical conception. At the end a complete cadence is needed; before the end the incompleteness of the melodic idea in its various stages of unrest will be met by variously imperfect cadences.

In the treatment of cadences the law of complemental relations comes again into view. The following indications of proper use may be given.

a. A complete cadence must touch the three classes of chords in a key, and to be decisive, with emphasis successively of subdominant, dominant and tonic effects.

b. A cadence loses all strength through inversions of its chords. Indeed, if the final chord be inverted the cadence impression is almost entirely absent.

c. A cadence into a modulation key must be far stronger, to produce the same effect of repose, than a cadence in the original key.

d. In a series of cadences still broader rhythm may be found, of strong and less strong ; important melodic halts always using the stronger cadences.

68. When the accompaniment of a melody is in more or less than three additional parts, additional rules need to be given as to doubling, omission, and statement of chords.

a. When the harmonization is in more than four parts, doublings are necessary in every chord (except, in five part harmony, the ninth chord and formations on an organ-point.) *All tones that are not tendency notes* may be doubled. But parallel fifths, octaves or unisons, and augmented intervals are no less objectionable here than elsewhere ; *unless a melody is reinforced purposely at octave or unison*, the progression being plainly because one part has given up its individuality.

When there are more than four voice parts it is often desirable to let the melodies cross one another. This may be readily done between inner parts ; but rarely between an inner and an outer part. The latter possibility arises only when special melodic value is given to the inner part, and no confusion as to chord or whereabouts of any melody ensues. It is harder to avoid such confusion when the crossing is made to below the bass, than when it is to above the soprano.

With four parts or less, crossings can never be imperative, but will occasionally be useful to secure additional interest to the melody which does the crossing.

b. When a melody has but two accompanying voices (*three part harmony*) it is often necessary to omit notes from the chord.

The comprehensive rule is that those notes only can be omitted which do not endanger recognition of the chord. This forbids omissions of tendency notes, and, usually, of root or third.

As an offset to the difficulty of avoiding bad omissions in certain cases, greater liberty of movement can be given to the accompanying voices, which should as far as possible acquire independent value, becoming themselves interesting as well as furnishing a harmonic basis for the principal melody. In general, however, the accompaniment should move as nearly as possible diatonically when the principal melody uses wide skips, and can skip more freely when the principal melody is quiet.

c. In (two part harmony) still greater care must be exercised to avoid ambiguity of chord. The laws of rhythm and of complemental relationships are here of very great value, since the evident impression of a chord may exist when accented rightly and with certain preceding chord, *even though the root or third or both* be omitted. This is especially true of the principal chords of a scale.

Two part harmony furnishes great opportunity and incentive to accompaniment of a melody in shorter notes than those of the melody. Often a melody that has mainly a single note to the rhythmic unit is given an accompaniment with two or four notes to the rhythmic unit. Several distinct types of accompaniment are recognizable, although a given composition will usually contain all the forms with predominance of one.

1.) The accompaniment may use chord material as if the chords were written in parts following ordinary rules of chord connection, but struck as arpeggios (successively) instead of together. In addition to the ordinary rules of chord connection, the accented notes should as far as possible be the unambiguous tones of the chord, or, what is practically the same thing, should make pleasant interval with the melody note.

2.) The accompaniment may introduce inharmonic tones freely, inserting chord tones always when necessary in order to avoid ambiguity, or to pass melodiously to the entrance note of an inharmonic progression.